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AFFDL-TR-70-10  
Volume II, Part II

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# LOW ALTITUDE ATMOSPHERIC TURBULENCE LO-LOCAT PHASE III

Volume II, Part II Frequency Data Plots

J. W. JONES, R. H. MIELKE, G. W. JONES, et al

THE BOEING COMPANY

TECHNICAL REPORT AFFDL-TR-70-10, VOLUME II, PART II

NOVEMBER 1970

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# **LOW ALTITUDE ATMOSPHERIC TURBULENCE LO-LOCAT PHASE III**

**Volume II, Part II Frequency Data Plots**

*J. W. JONES, R. H. MIELKE, G. W. JONES, et al*

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## FOREWORD

This is the final report on the Low-Low Altitude CAT research work conducted under Contract Number F33615-68-C-1468 (LO-LOCAT Phase III). The report was prepared by The Boeing Company, Wichita Division, for the Air Force Flight Dynamics Laboratory, Wright-Patterson Air Force Base, Ohio.

The LO-LOCAT Phase III project was part of Advanced Development Program 682E (ALLCAT) and was under the direction of ADP 682E Program Director, Mr. E. Brazier, and the Technical Coordinator, Mr. Neal V. Loving. Mr. Jan Garrison, FBE, was the Air Force Project Engineer.

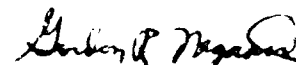
The research effort was conducted under the Boeing supervision of Mr. F. K. Atnip, Program Manager. Mr. C. F. Peterson was the Project Pilot. Mr. D. B. Marshall was in charge of instrumentation, Mr. H. H. Depew directed the data processing effort, Mr. J. D. Gault was in charge of data analysis, and Mr. W. B. Moreland (Boeing-Seattle) directed the meteorological forecasts and analysis. Airplane maintenance and inspection were the responsibility of Mr. J. Strain and Mr. J. Bonawitz, respectively.

Mr. Gerald A. Comstock piloted the observer airplane over the Peterson Field, Colorado, high mountain route and was also backup pilot for this program. While acting in this latter capacity during a data gathering flight over the Griffiss AFB, New York route, Mr. Comstock was fatally injured in a forced landing following an engine flameout.

Authors of this report, other than those shown on the cover, were Messrs D. E. Gunter and K. R. Monson.

The report was submitted by the authors 17 August 1970. It was reviewed by Mr. Jan Garrison and Dr. T. Swaney (Boeing) who made many constructive comments and suggestions.

This technical report has been reviewed and is approved.

  
GORDON R. NEGAARD, Major, USAF  
Chief, Design Criteria Branch  
Structures Division  
Air Force Flight Dynamics Laboratory

## ABSTRACT

This report presents procedures, analysis methods, and final results pertaining to the LO-LOCAT Phase III program. Approximately 150 hours of low altitude (100 - 1000 feet) turbulence and associated meteorological data were recorded from 16 August 1968 through 30 June 1969. The original program was curtailed by approximately six weeks due to the crash of the T-33 research airplane. A model of the turbulence environment at low-level is presented in terms of gust velocity primary peaks, level crossings, amplitude samples, rms values, and gust maxima, as well as derived equivalent gusts, turbulence scale lengths, and power spectra. Mathematical expressions for turbulence spectra, scale length, and primary peak statistics are shown. Correlations between atmospheric gust velocities and meteorological and geophysical phenomena are evaluated. It was found that gust velocity magnitude at low altitude is most affected by atmospheric stability and terrain. Gust velocity rms values above 1.5 fps may be approximated by truncated Gaussian distributions. For wavelengths less than 15,000 feet, turbulence spectra are best represented by the von Karman mathematical expressions. The turbulence, sampled for 4-1/2 minute intervals over a distance of approximately 32 miles at absolute altitudes below 1,000 feet, was found to be basically stationary, isotropic, and homogeneous. A high percentage of Phase III data were recorded over high mountains since very little high mountain data were recorded under contour flight conditions at low level during Phases I and II. Phase III data are compared with data from Phases I and II and with data from other low altitude programs.

This report consists of two volumes with each volume divided into two parts. Parts I and II of Volume I give the techniques and results of data analysis. Part I of Volume II provides the details pertaining to data acquisition, instrumentation, calibrations and checks, data processing, and data quality. Data tabulations and plots and a log of pertinent information concerning the program are also presented in Volume II Part I. Part II of Volume II contains the power spectral density and other frequency data plots.

(Distribution of this abstract is unlimited.)

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SYMBOLS

VOLUME II, PART II

Symbols and Abbreviations

cpf	Cycles per foot
L	Turbulence scale length (feet)
PSD	Power Spectral Density
u	Longitudinal gust velocity (feet/second); positive-aft
$V_G$	True airspeed or ground speed (feet/second)
v	Lateral gust velocity (feet/second); positive-right
w	Vertical gust velocity (feet/second); positive-upward

## APPENDIX IX

### GUST VELOCITY POWER SPECTRA AND ASSOCIATED DATA

This appendix contains the power spectra plots of the gust velocity components for selected turbulence samples. Plots are shown indicating the homogeneity and isotropy characteristics of the turbulence, and the coherency between the individual gust velocity components. Comparisons of experimental power spectra to theoretical spectra are also shown. The above information is presented in the following figures in the order of test and leg number. Only those turbulence samples considered to be homogeneous are shown.

The following is a brief explanation of each set of data, how it was obtained, and the definition of abbreviated notes and scale identification.

#### Power Spectra

The ordinate scale, "Normalized PSD," is the power normalized by the square of the time series standard deviation. The abscissa, "Spatial Frequency," was usually computed by dividing frequency by ground speed; however, true airspeed was used when ground speed data were not available.

Scale length values,  $L$ , were determined from equations derived from von Karman's mathematical spectra expressions. The wind angle,  $WA$ , is that measured with respect to the ground track of the airplane. Angles were positive when directed from the left of the ground track. An angle of zero degrees is defined as a direct tail wind.

#### Homogeneity

The "Homogeneity Check PSD Ratio" was obtained by dividing the unnormalized power spectra of the middle third of the data sample by the unnormalized power spectra of the entire sample. This ratio will approach unity for a turbulence sample having perfect homogeneity.

#### Coherency

The "u-w Coherency" and the "v-u Coherency" is a measure of the statistical independence between the lateral and vertical and the lateral and longitudinal gust velocity components, respectively. Ideally, the components should be statistically independent and their coherency equal to zero. However, due to statistical variations in the power spectra and cross spectra calculations and noise in the experimental data, the coherency can only approximate zero.

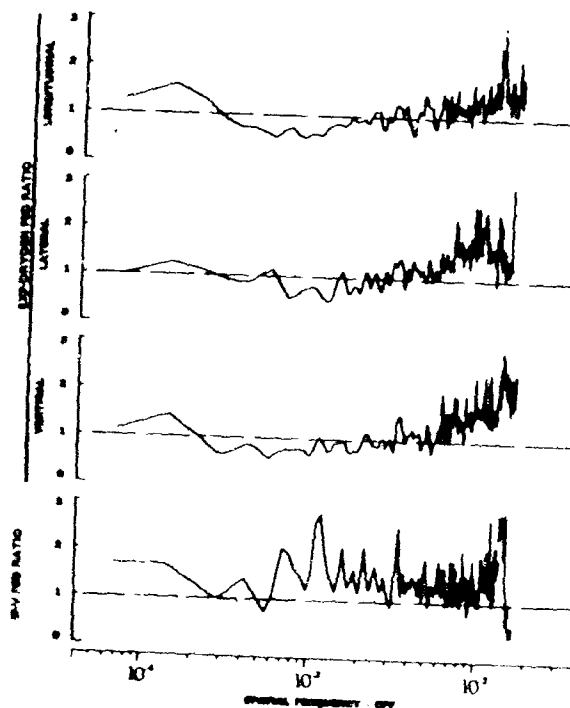
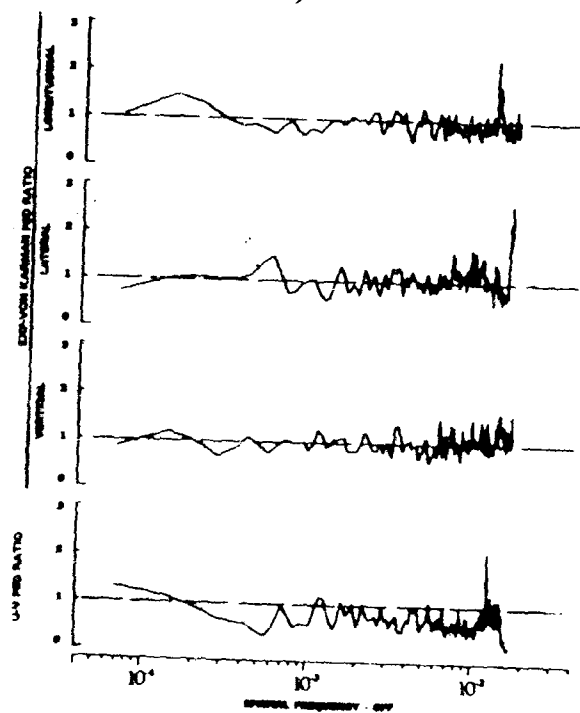
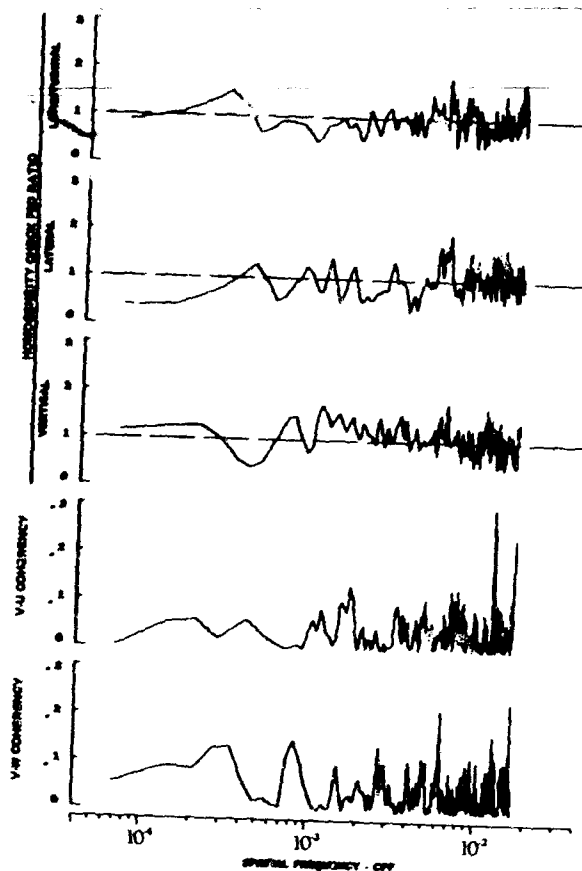
#### Experimental to Mathematical Comparisons

Plots of "Experimental to von Karman PSD Ratios" and "Experimental to Dryden PSD Ratios" show the relationship of the experimental spectra to mathematical

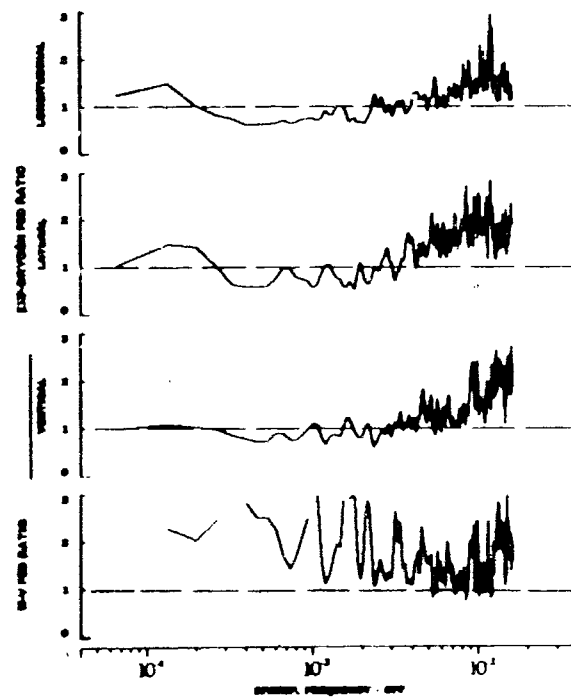
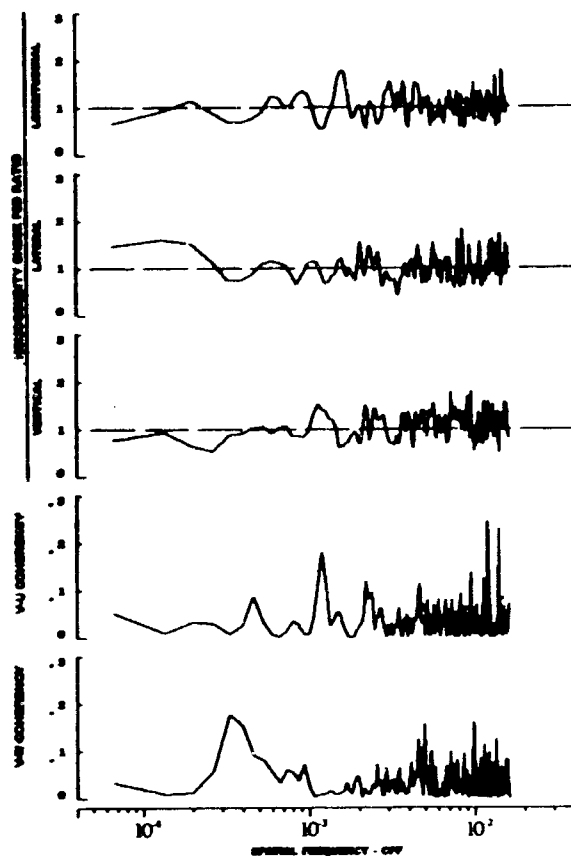
spectra for each gust velocity component. A ratio equal to unity is indicative of perfect agreement between experimental and mathematical spectra.

### Isotropy

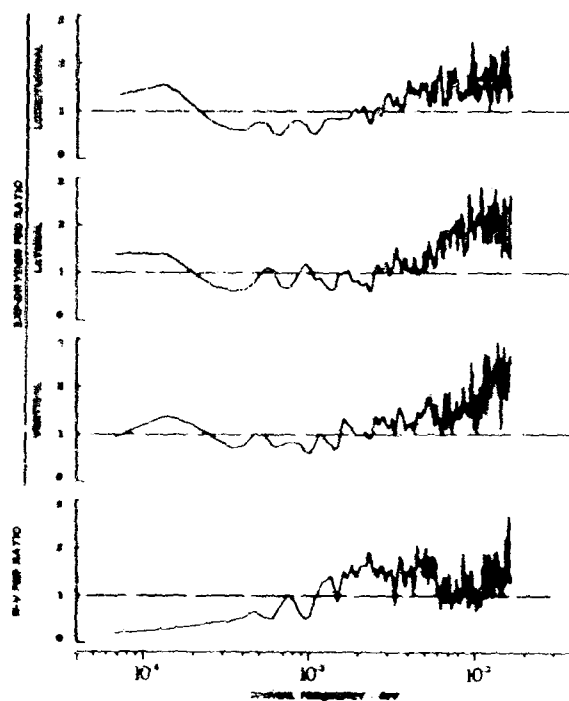
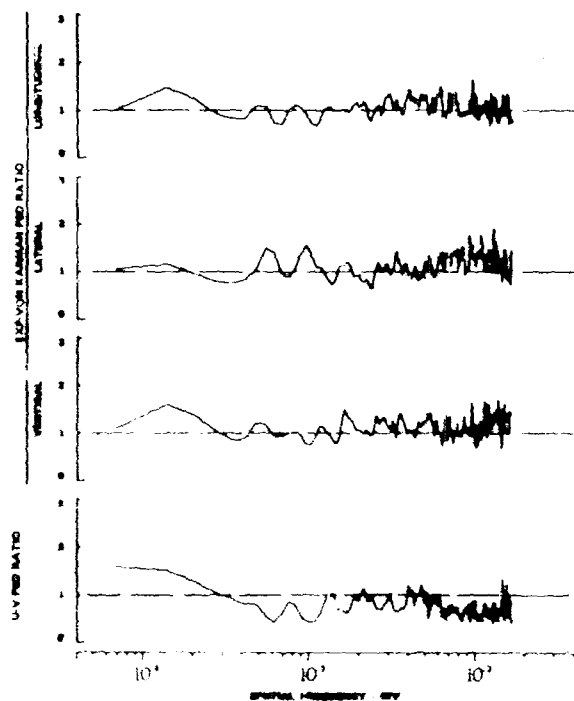
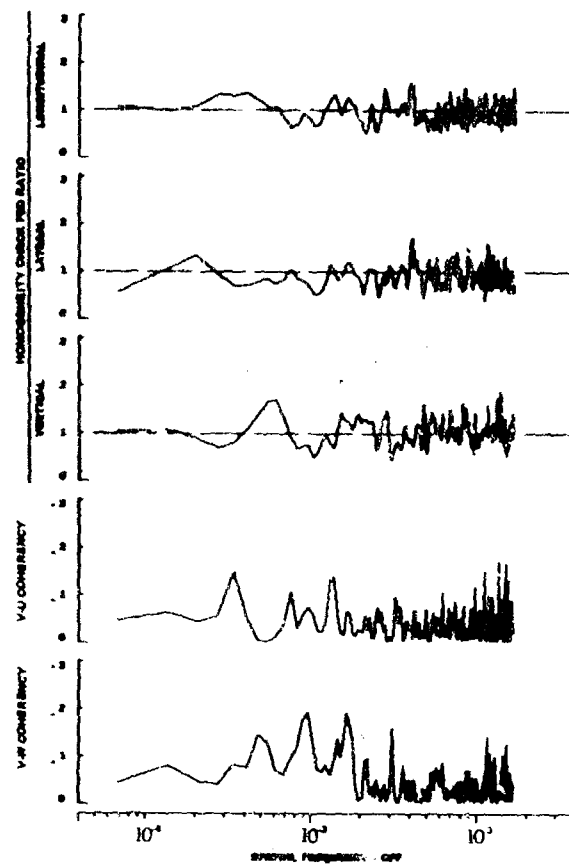
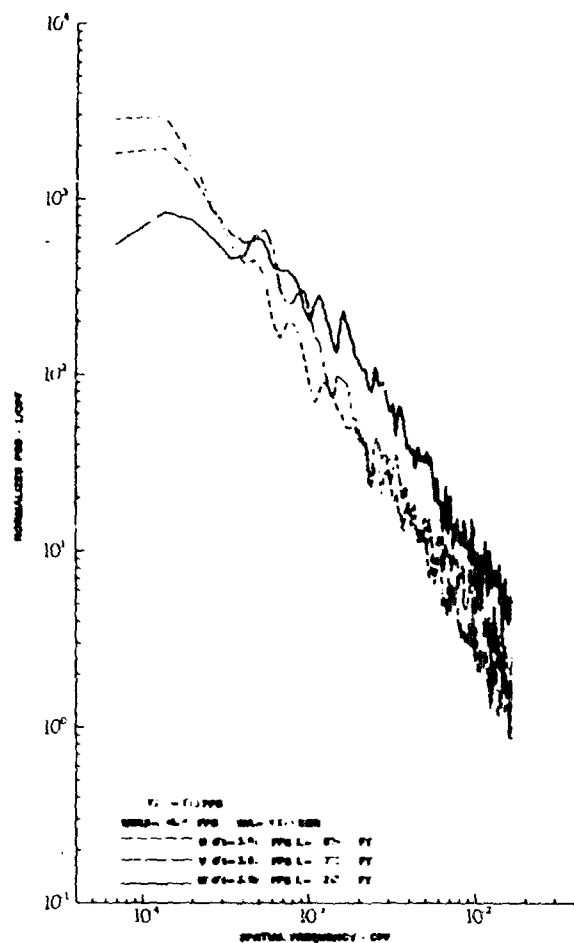
The "u-v PSD Ratio" and "w-v PSD Ratio" are indicative of the isotropic characteristics of the turbulence. This relationship was obtained by dividing the unnormalized power spectra of the vertical and longitudinal components by that of the lateral component. Perfect isotropy is indicated when the w-v PSD ratio is equal to unity throughout the frequency range and the u-v PSD ratio is equal to 2.0 at the low frequencies and 0.75 at the high frequencies. This is discussed in detail in Section V of Volume I.



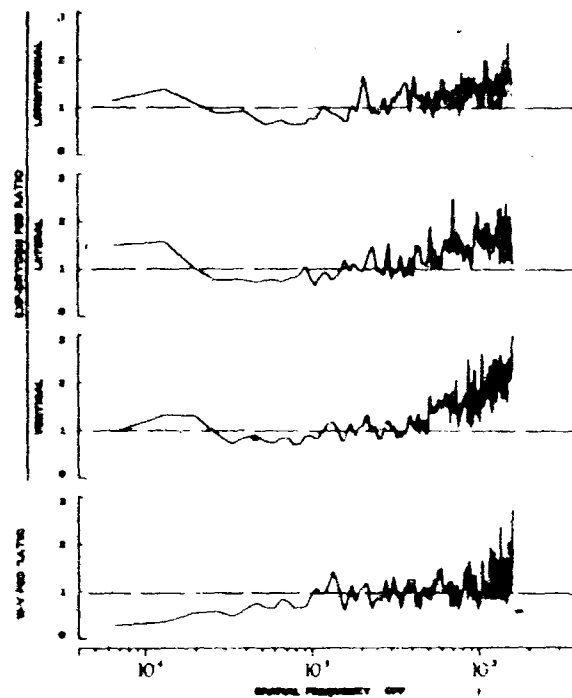
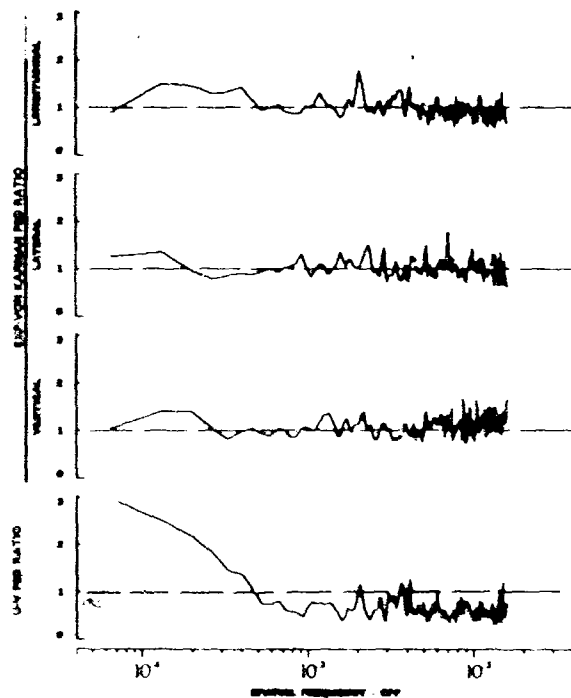
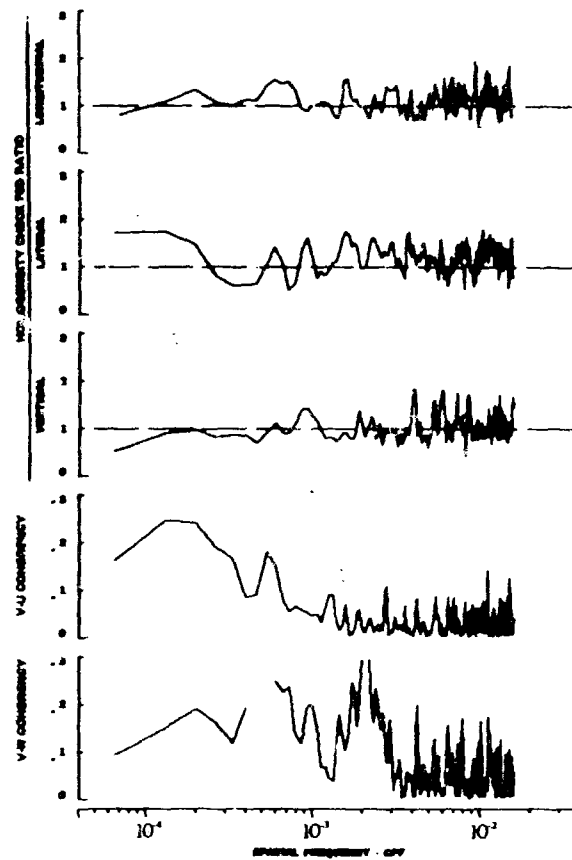
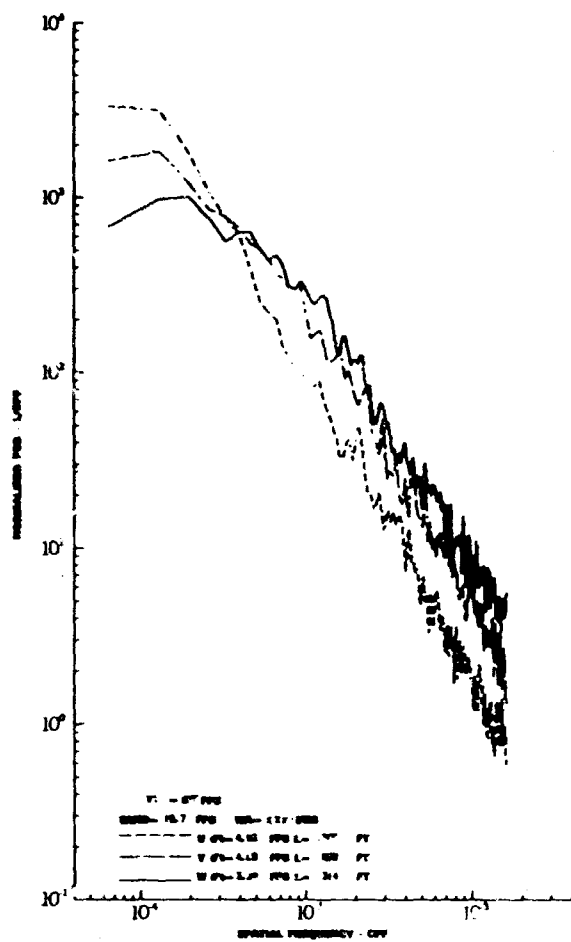
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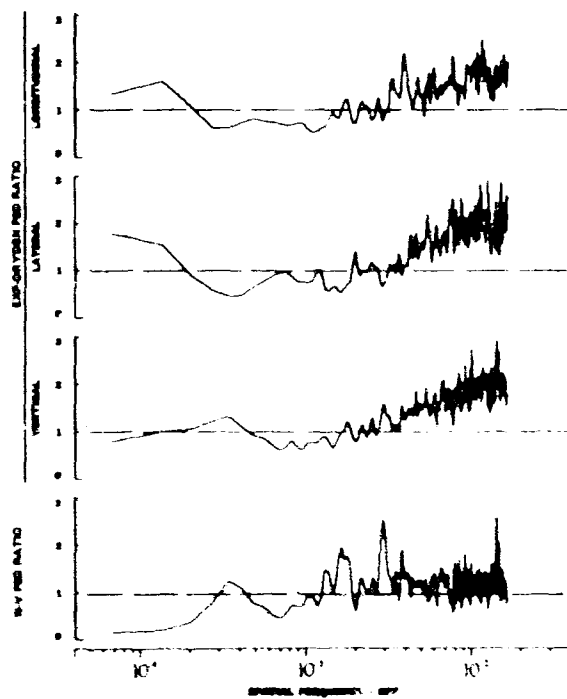
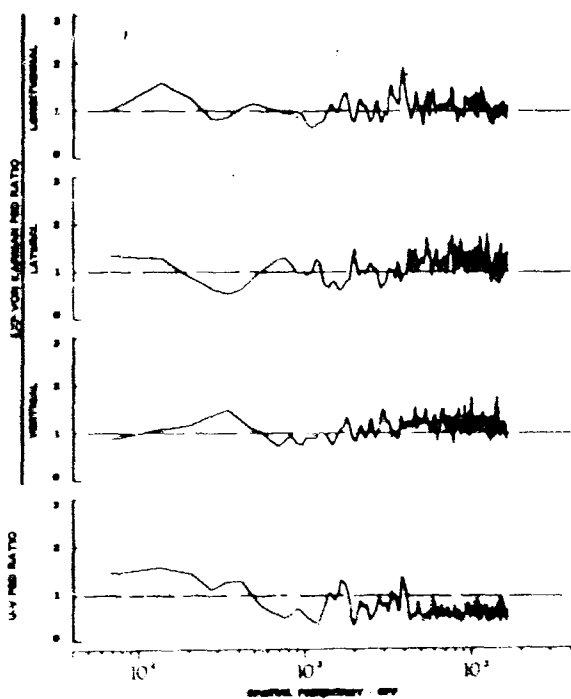
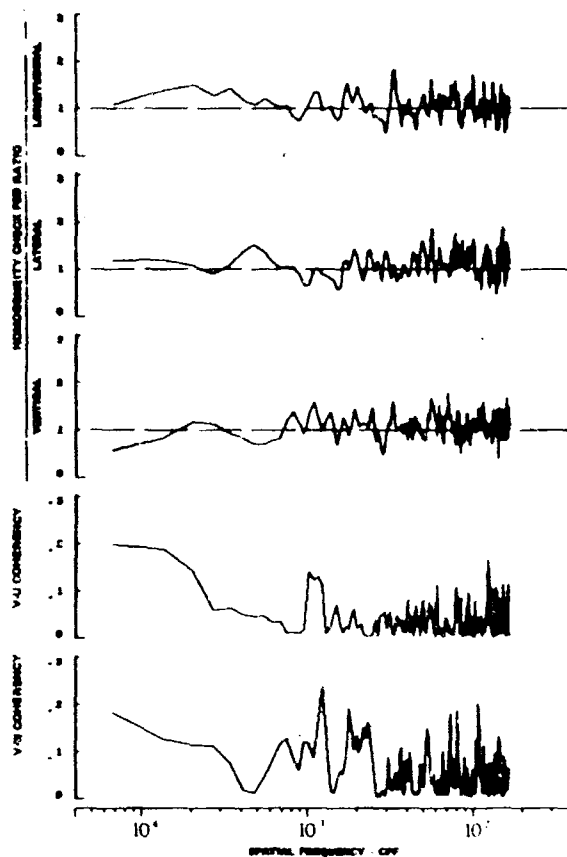
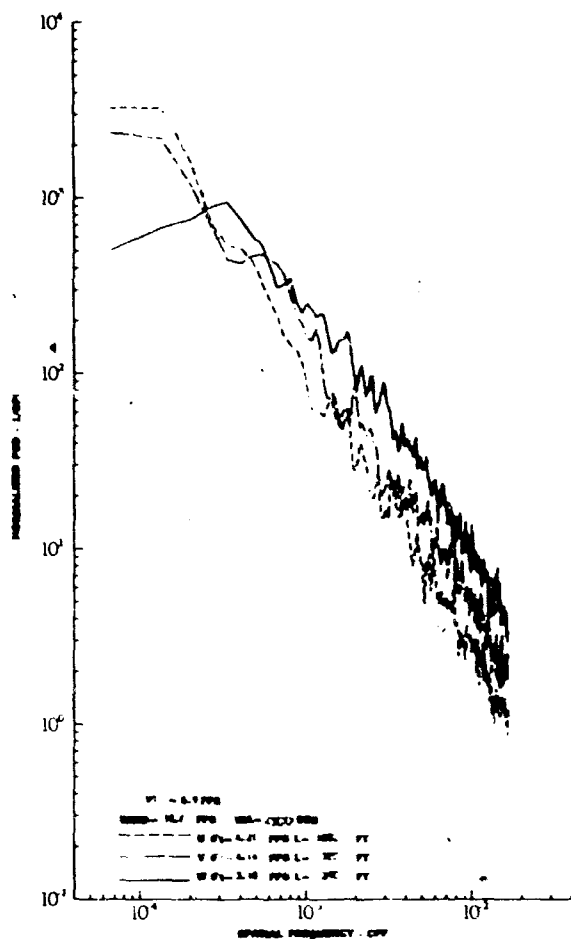


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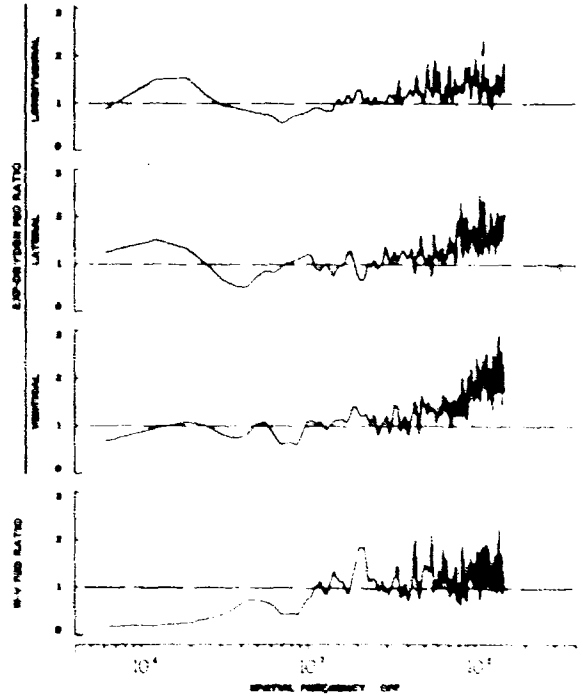
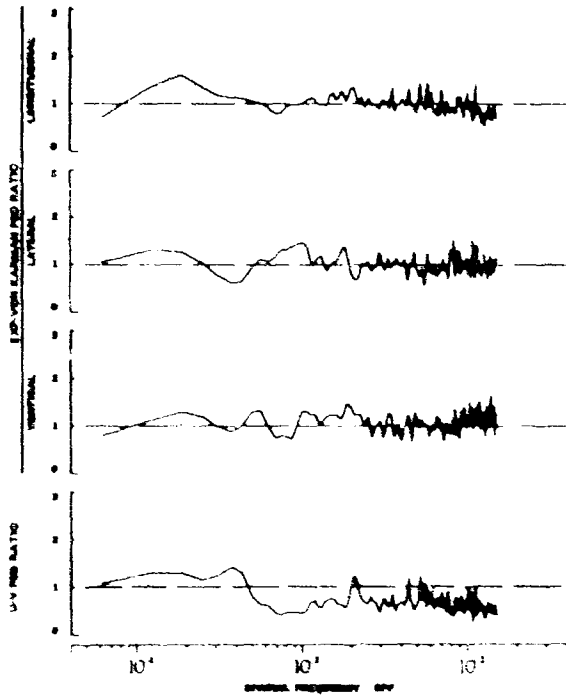
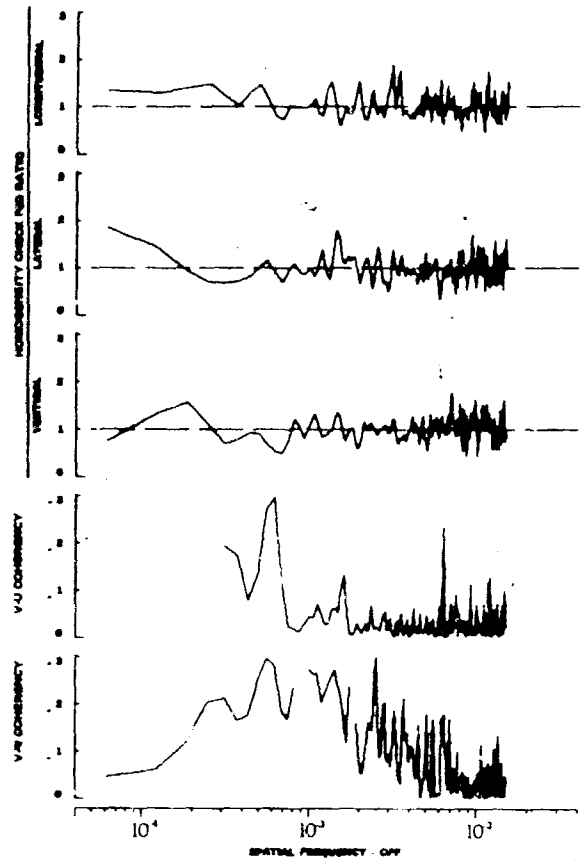
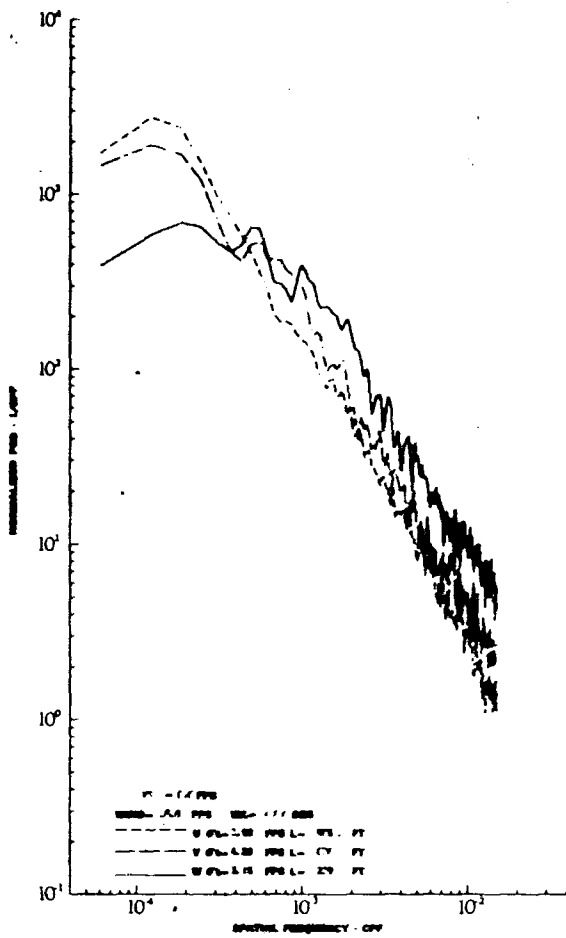


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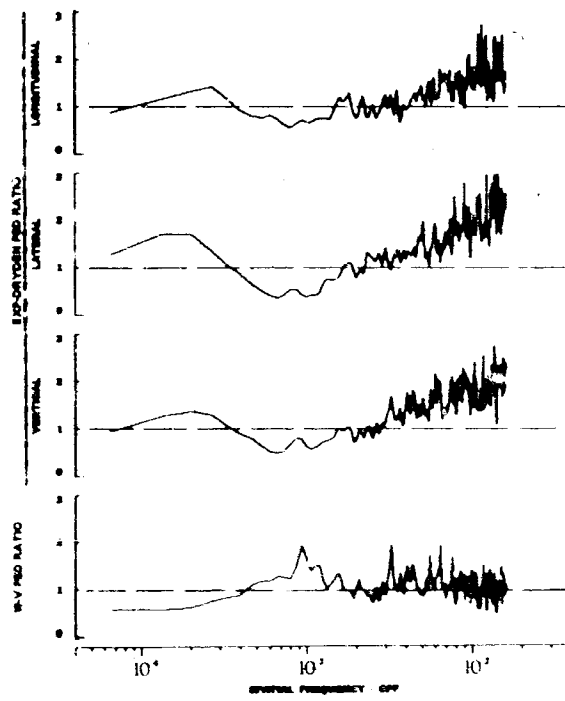
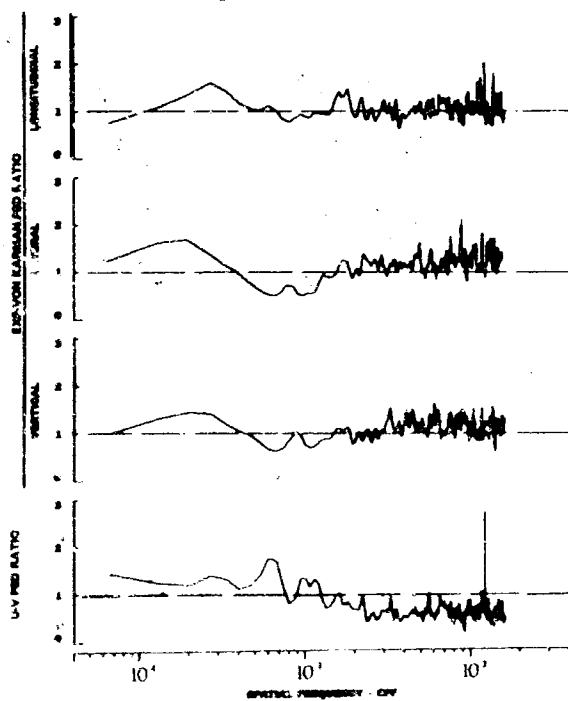
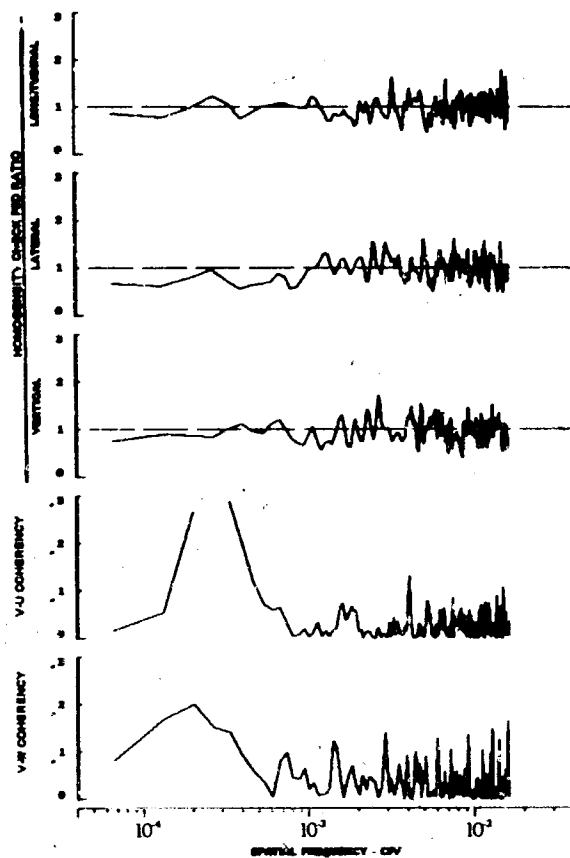
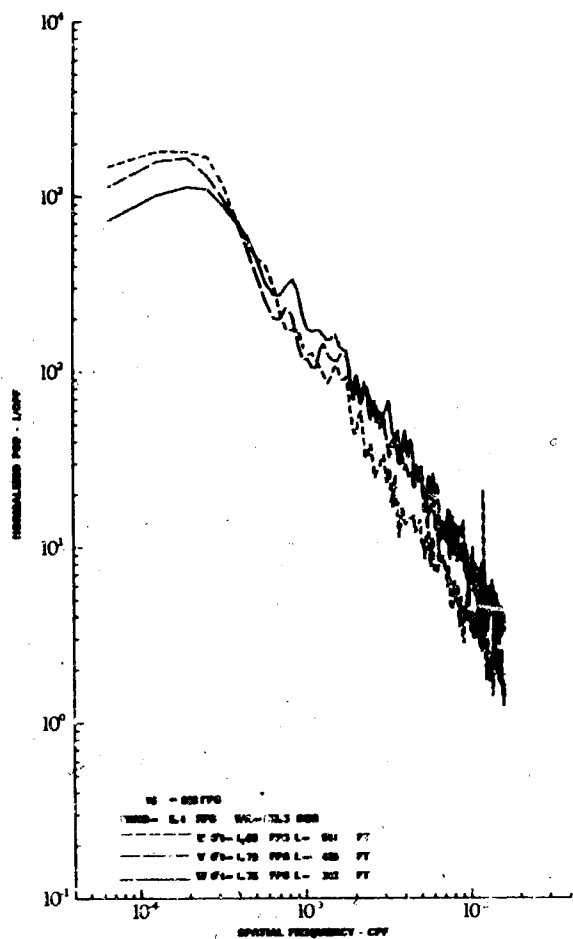




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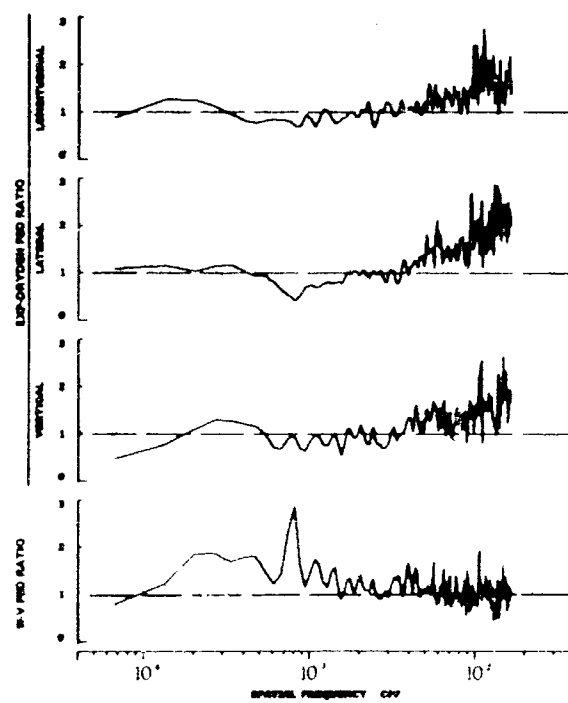
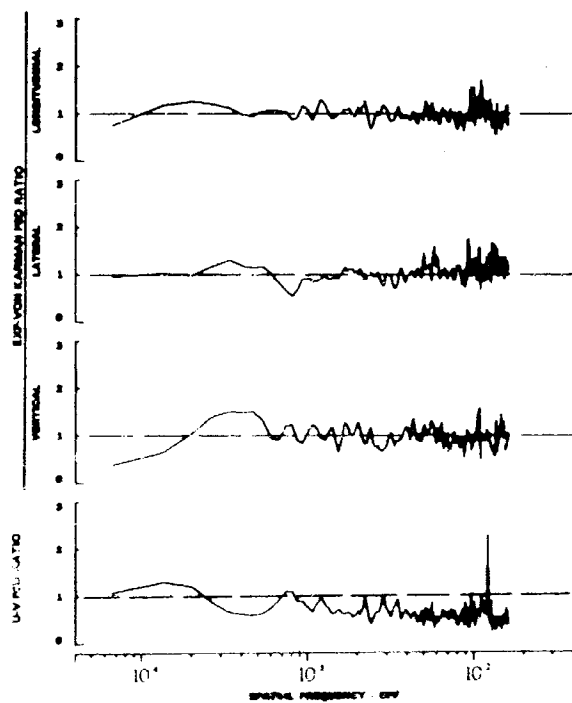
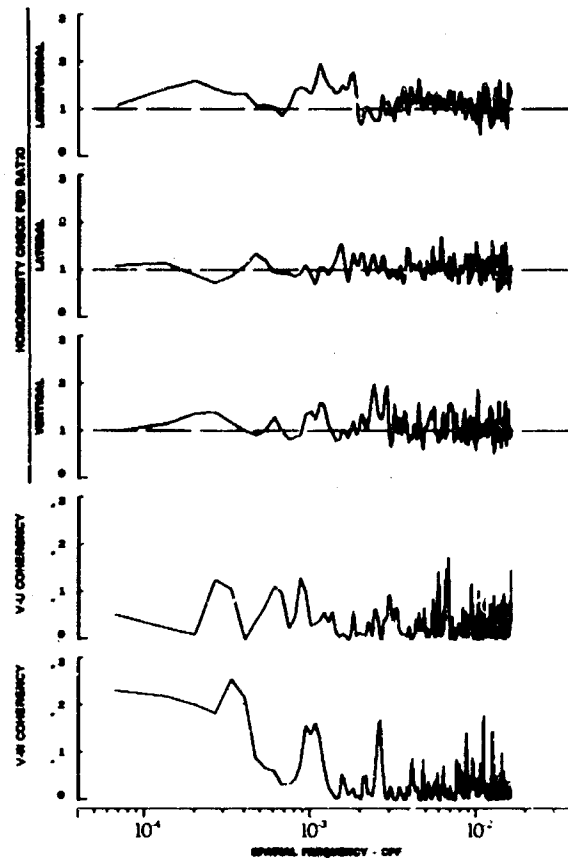
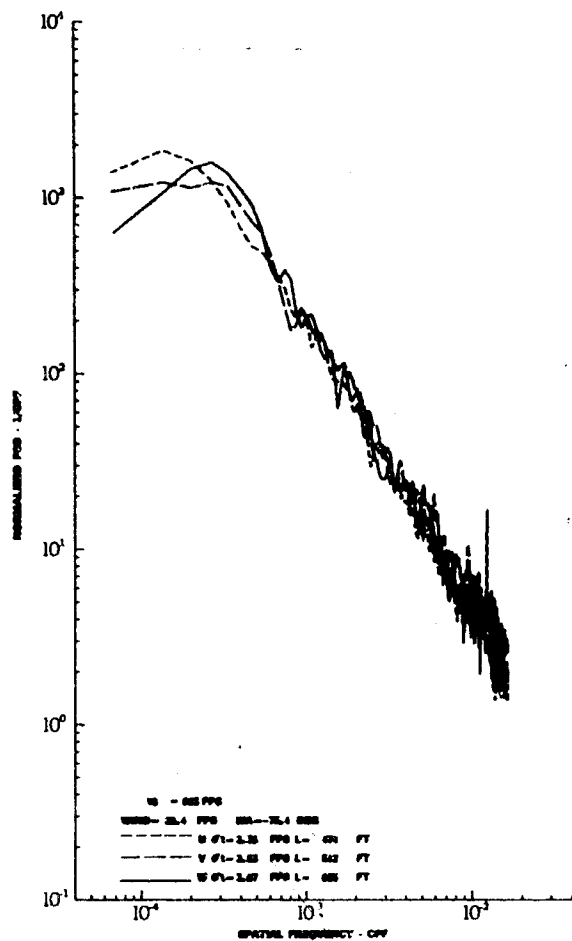


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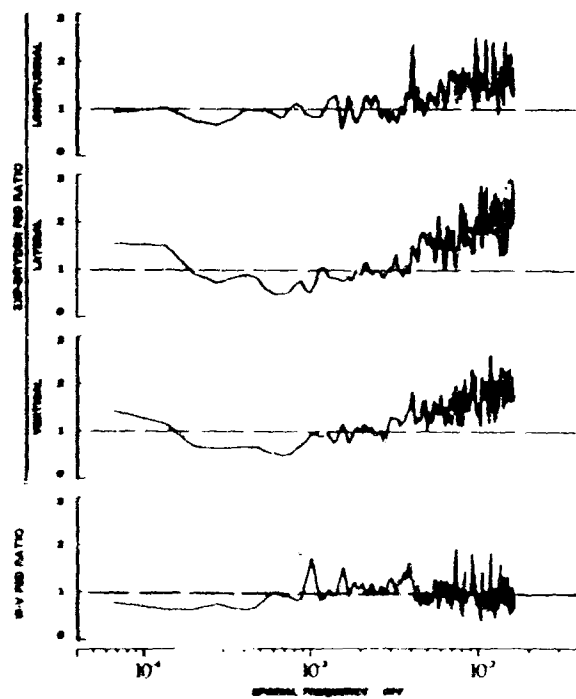
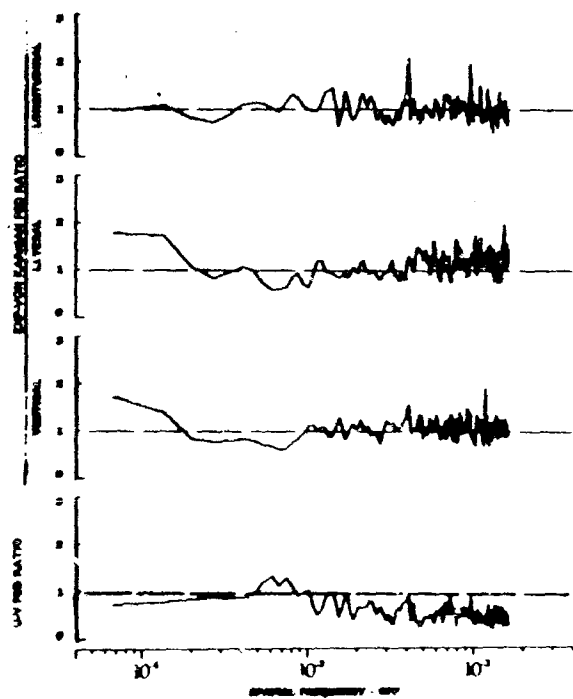
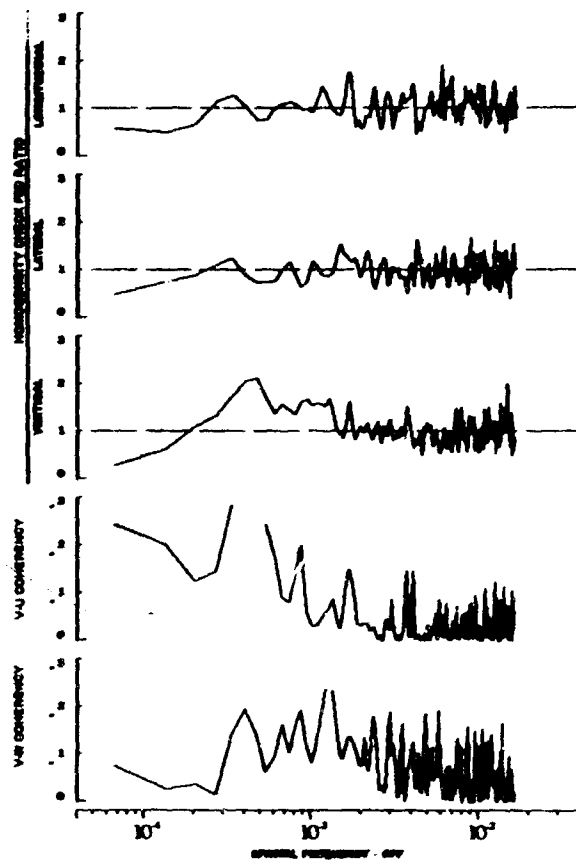
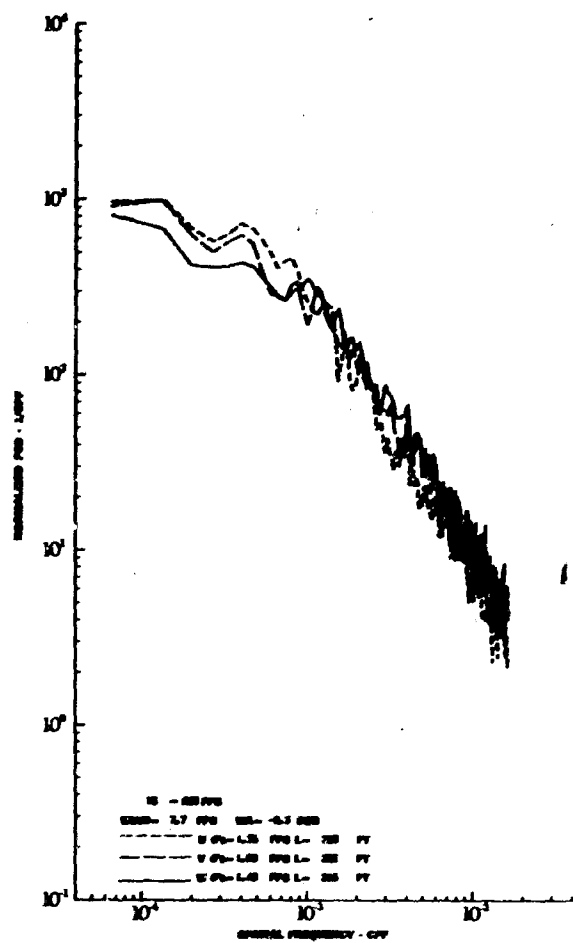


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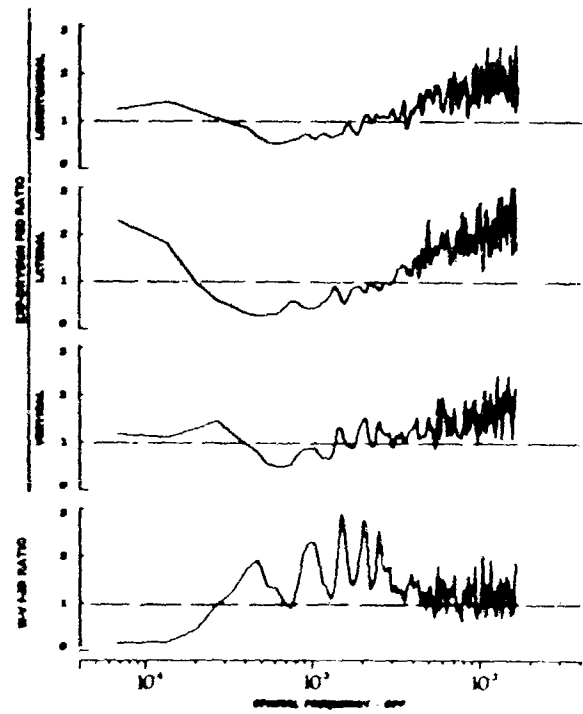
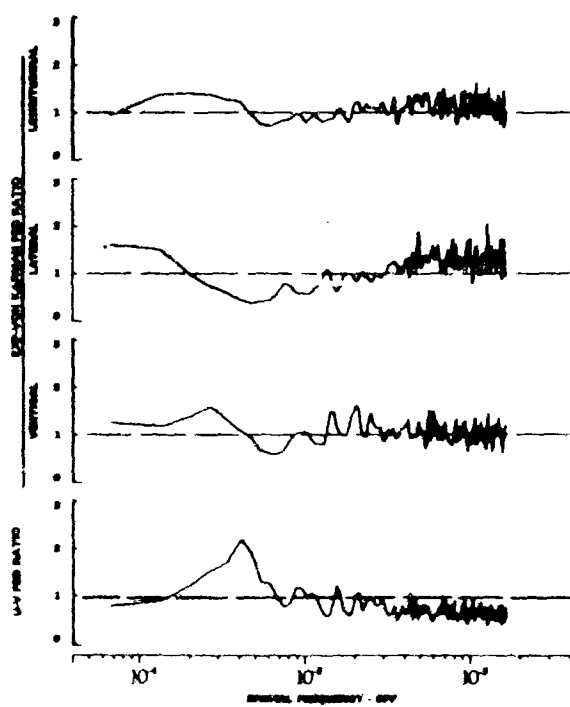
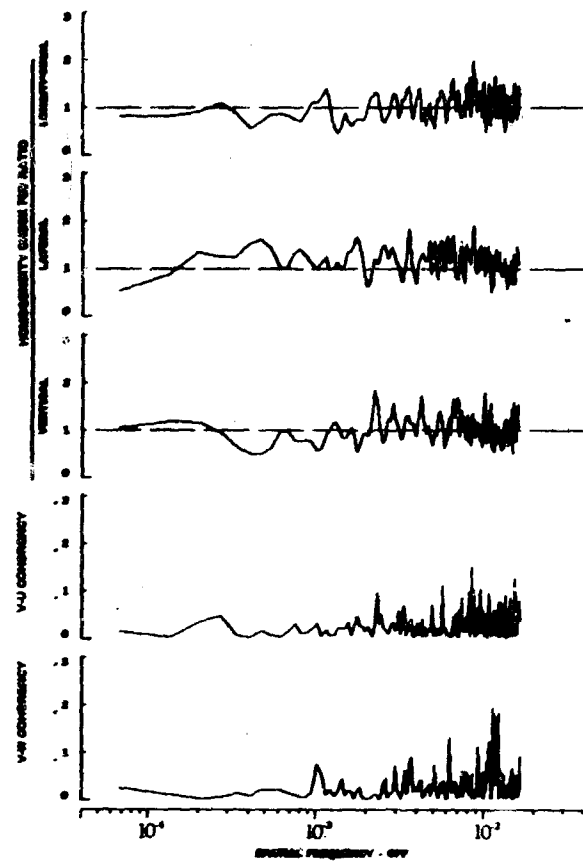
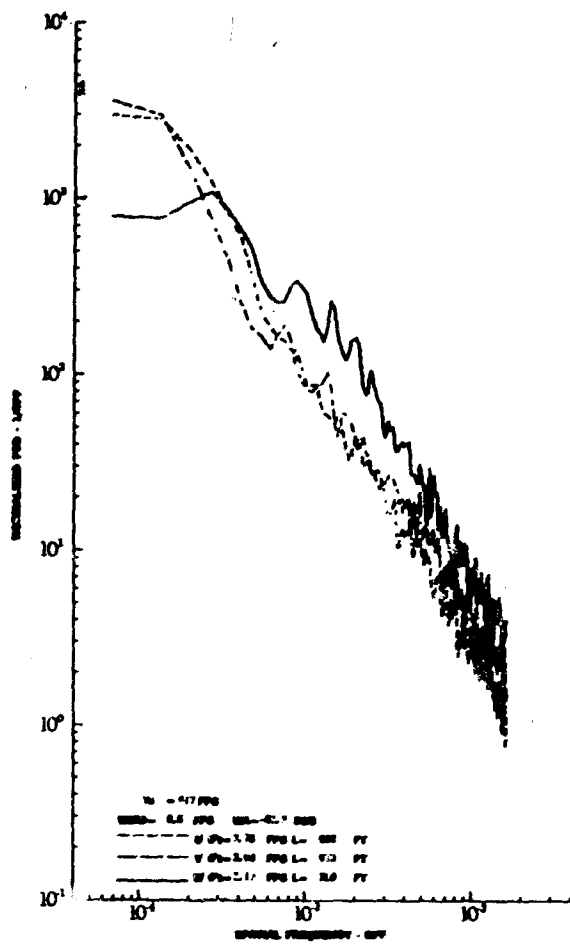


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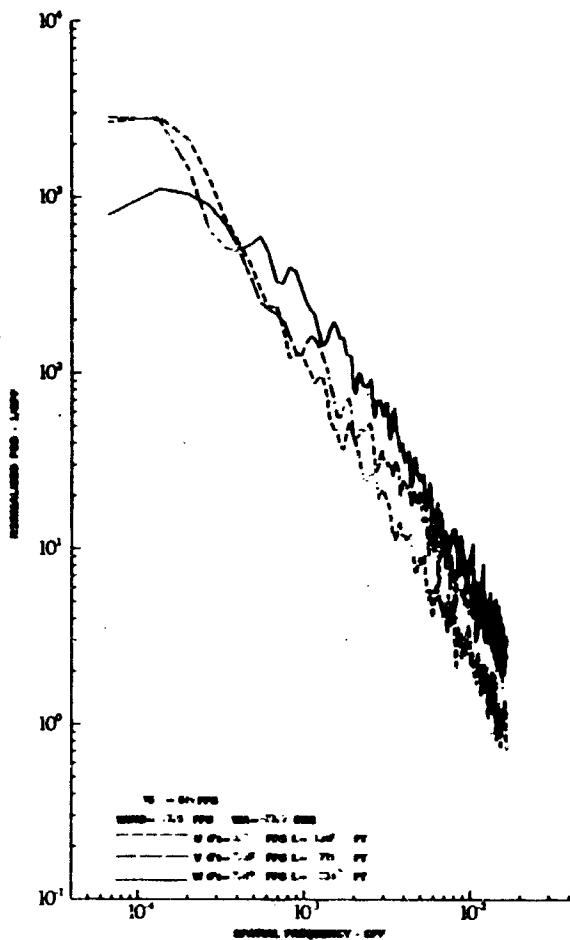
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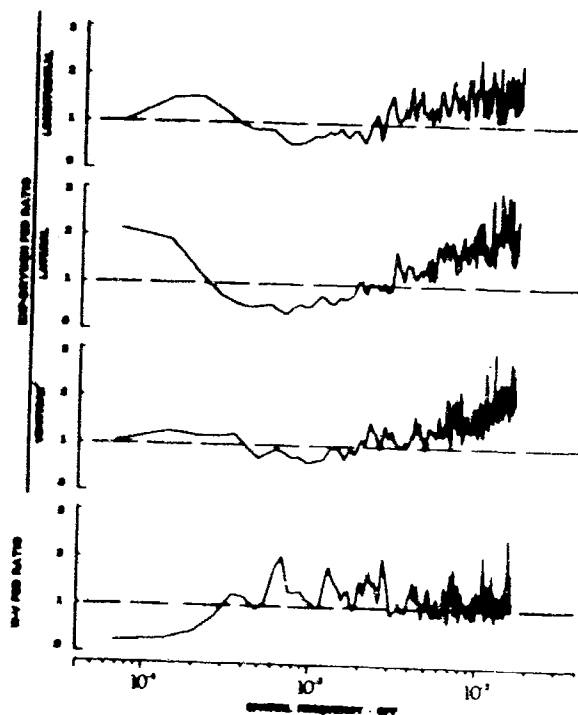
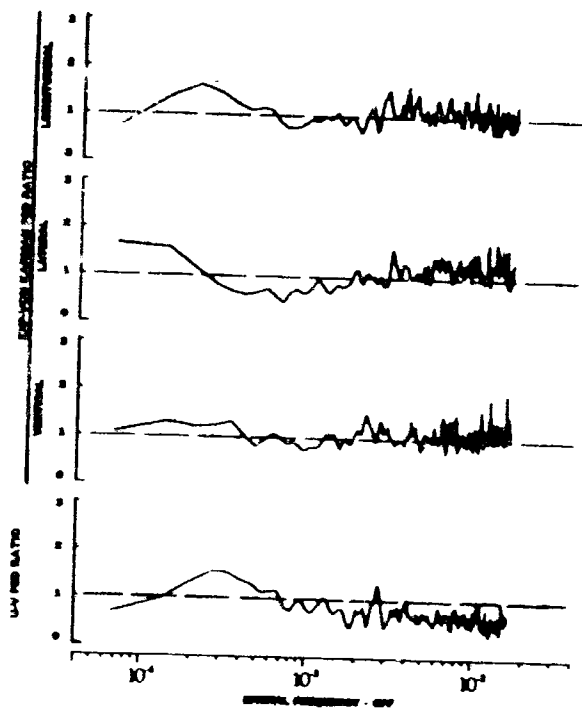
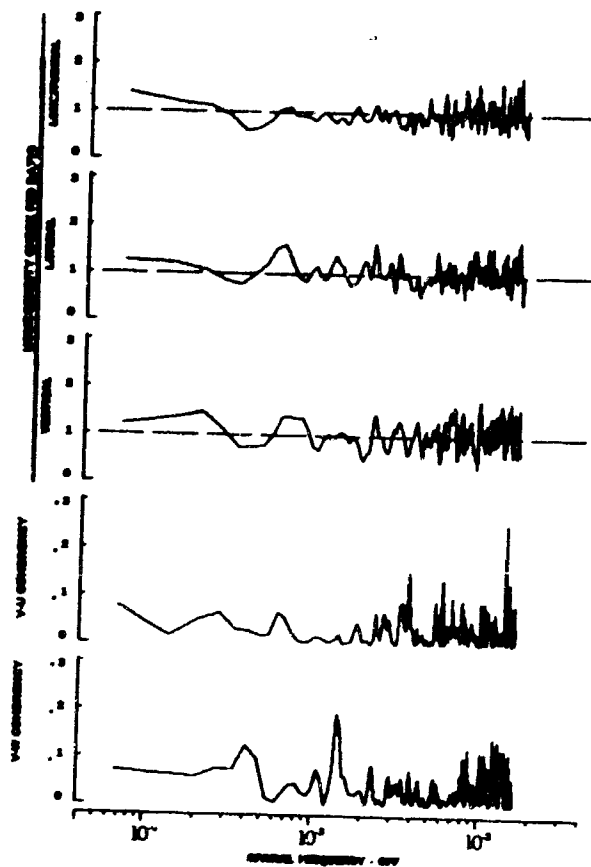
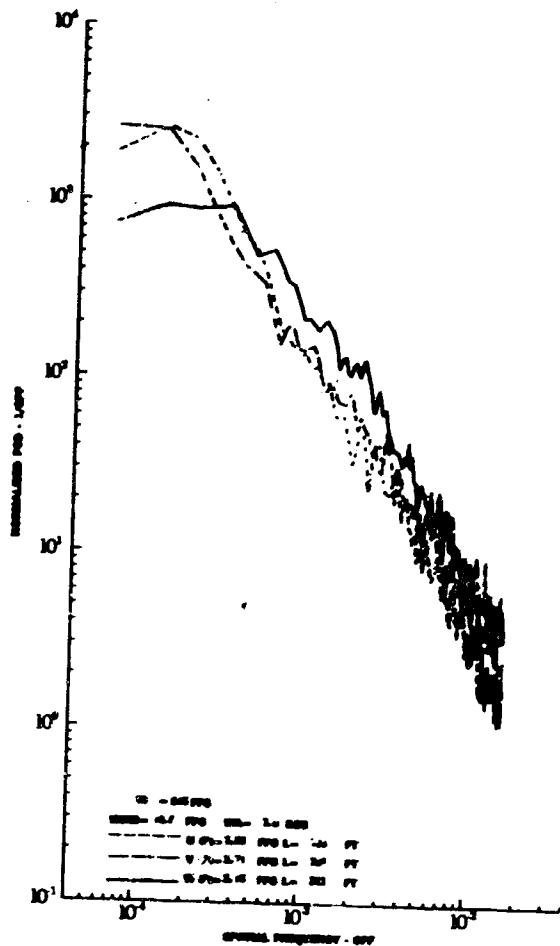




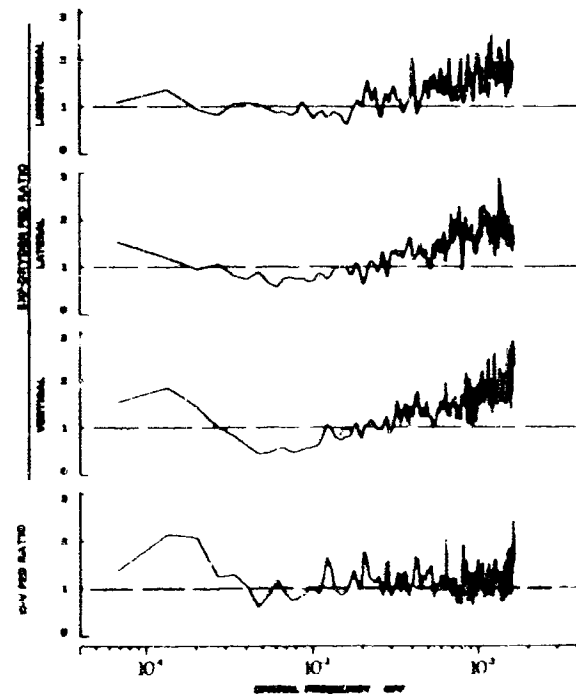
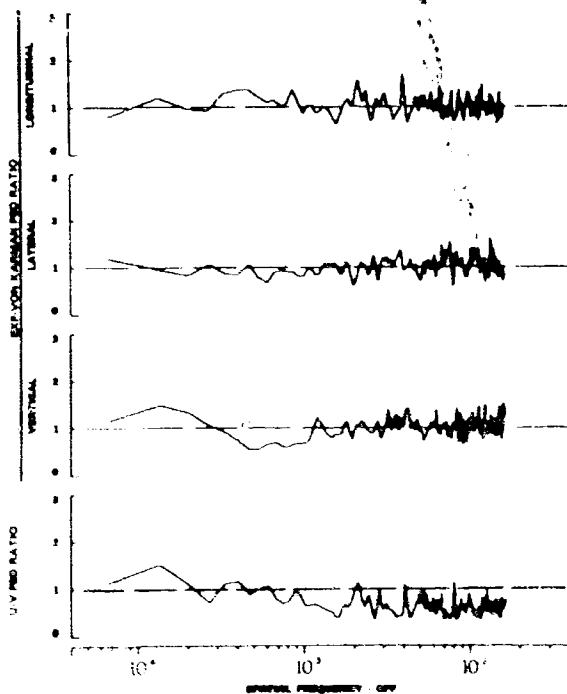
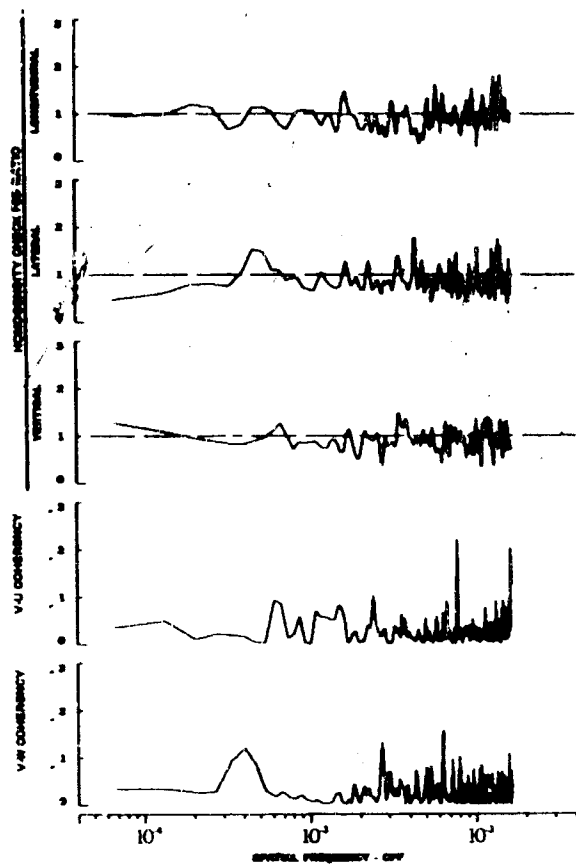
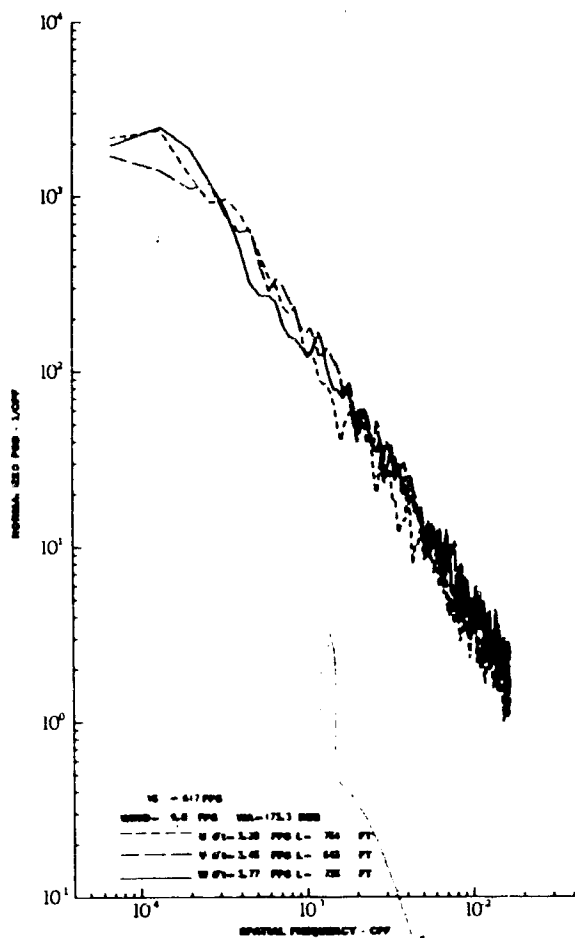
Turbulence Spectra Data For Test 29, Leg 3, Category 414324





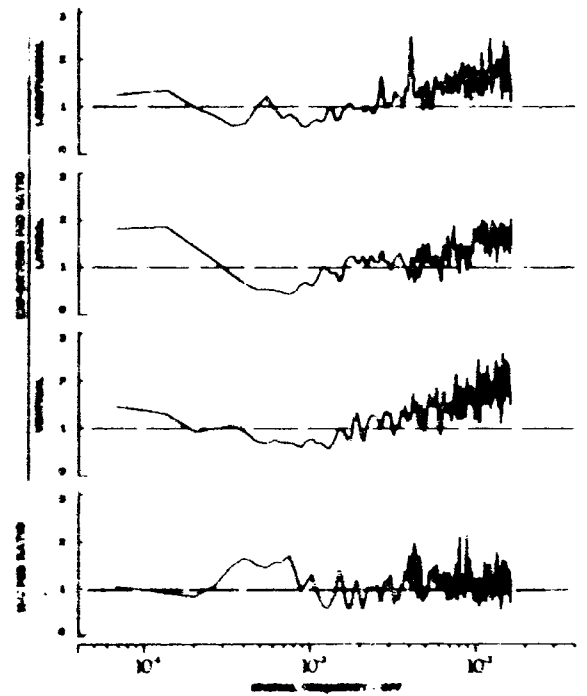
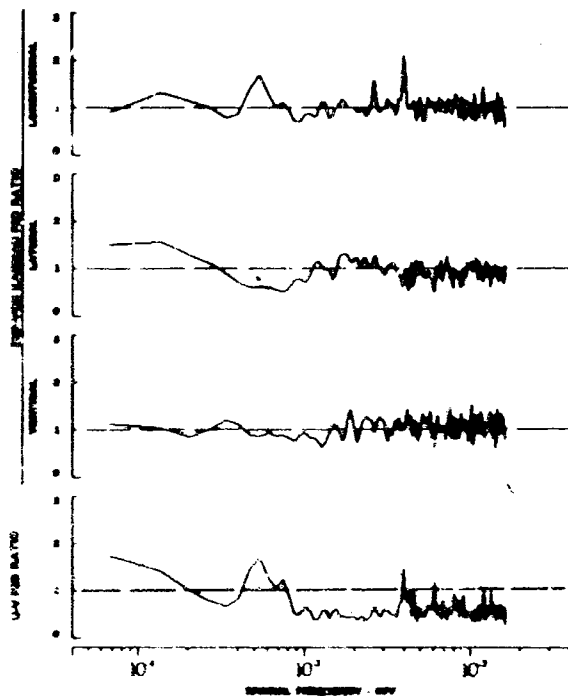
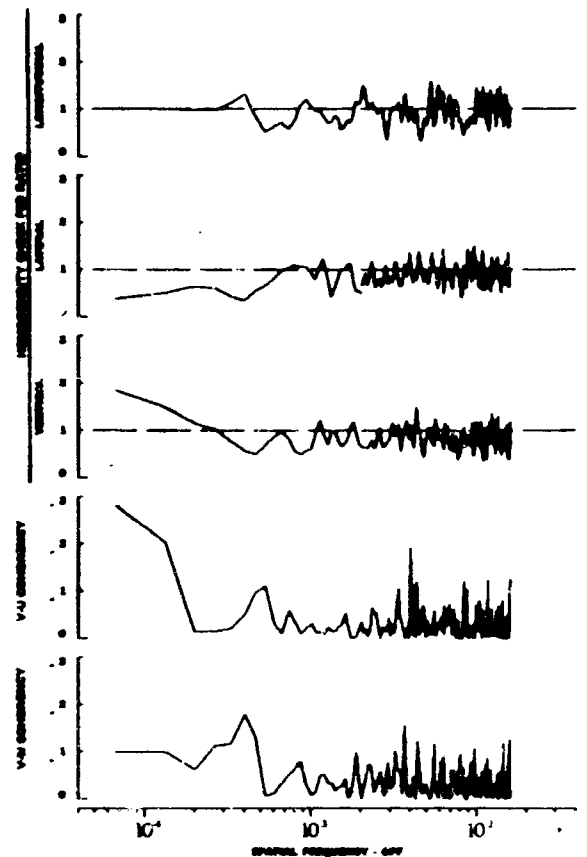
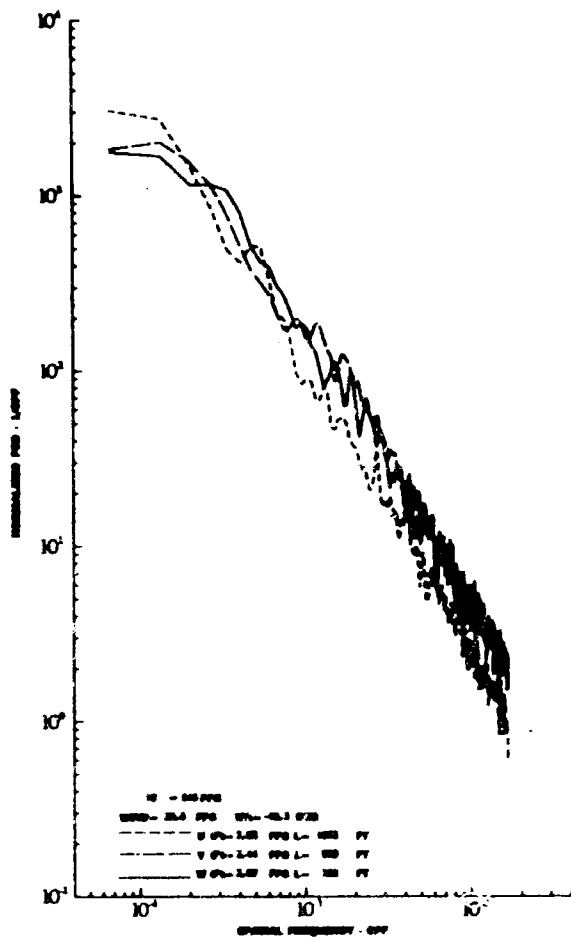


Turbulence Spectra Data For Test 29, Log 7, Category 414324

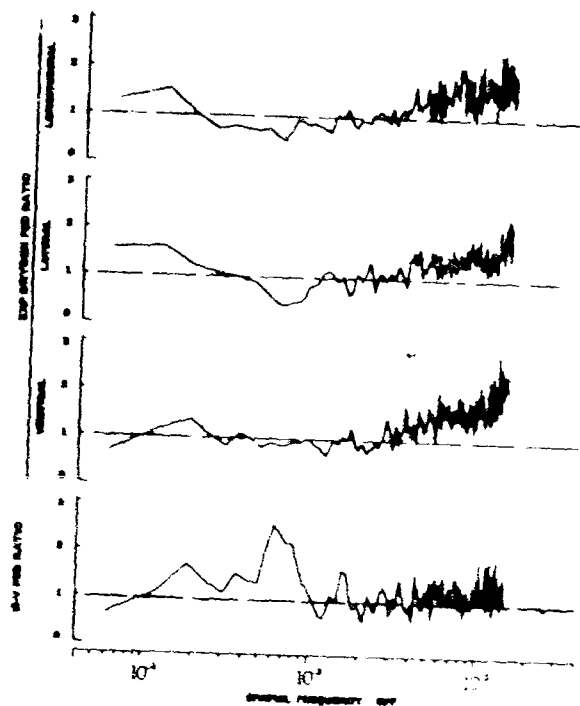
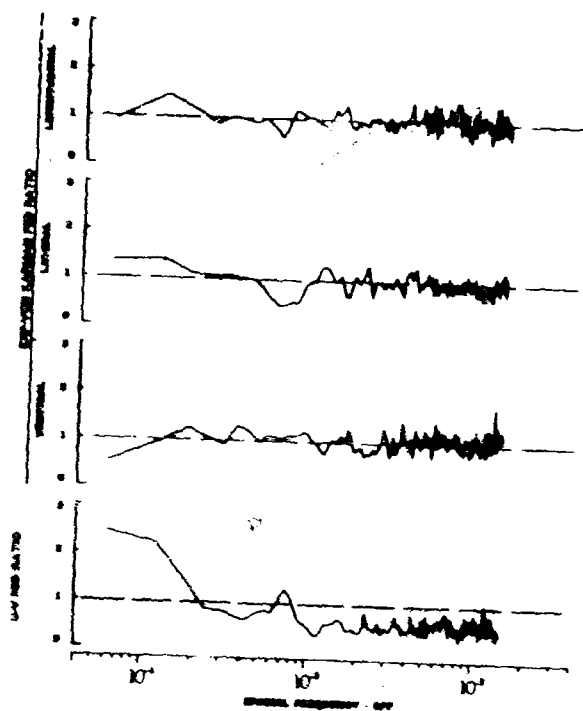
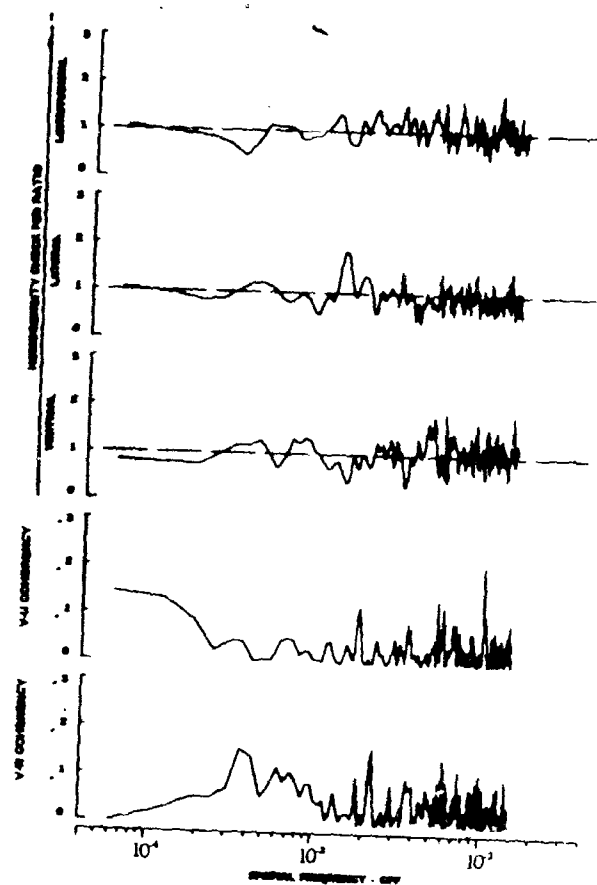


Turbulence Spectra Data For Test 32, Leg 2, Category 424324

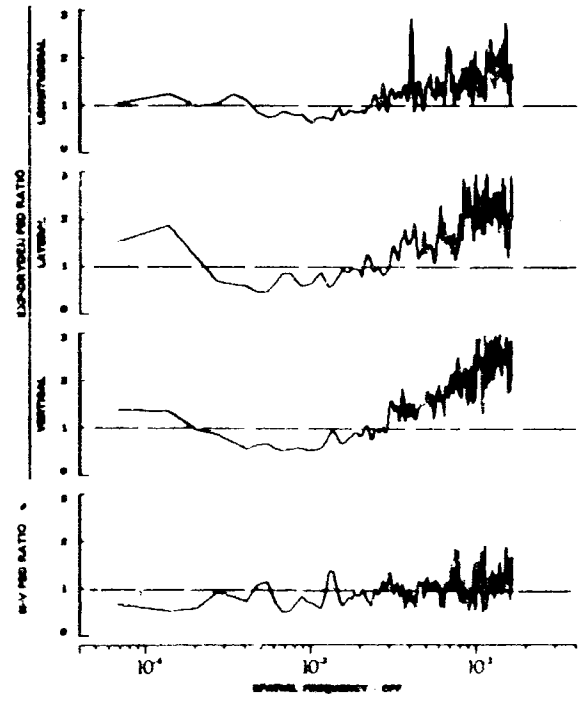
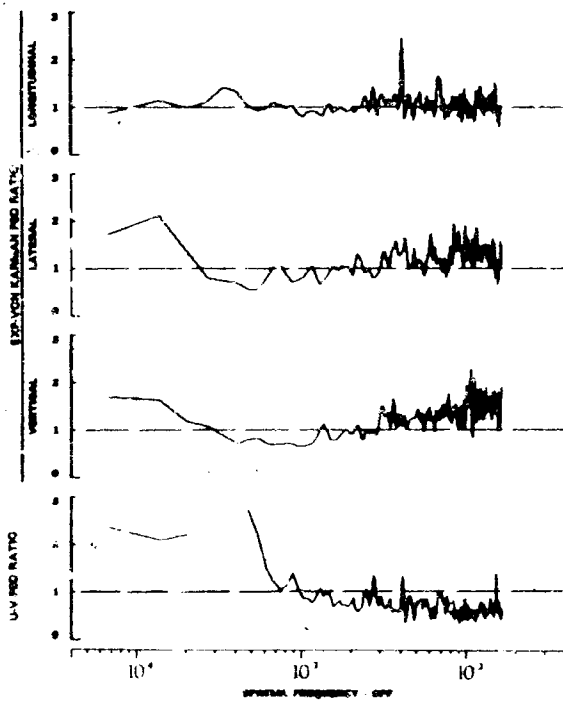
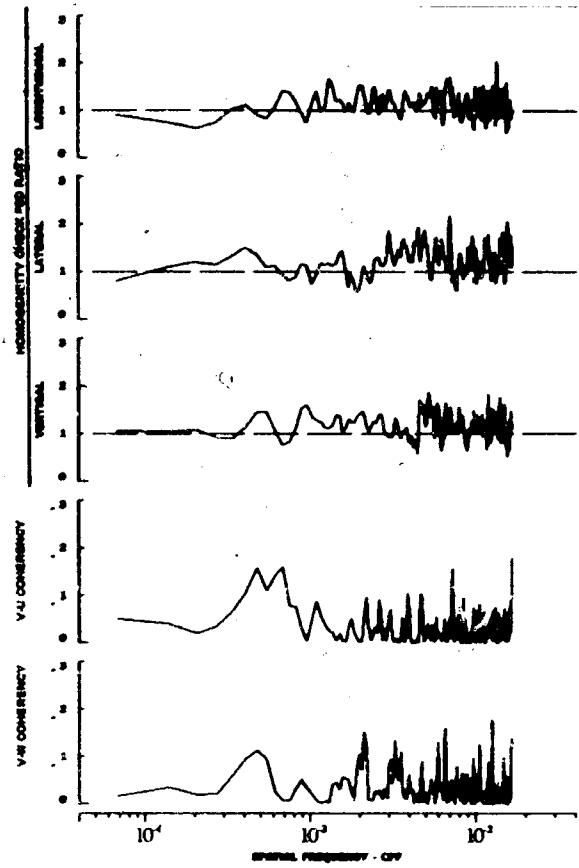
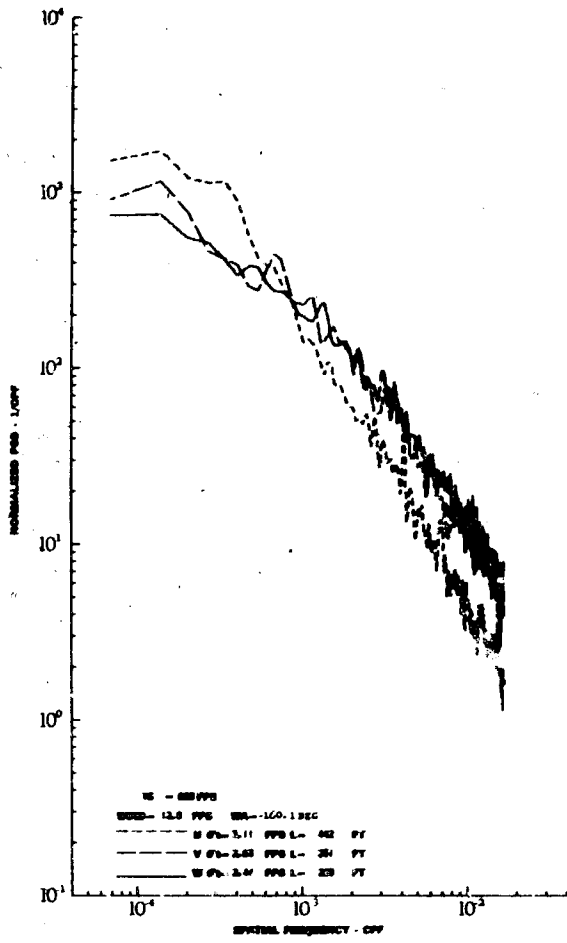




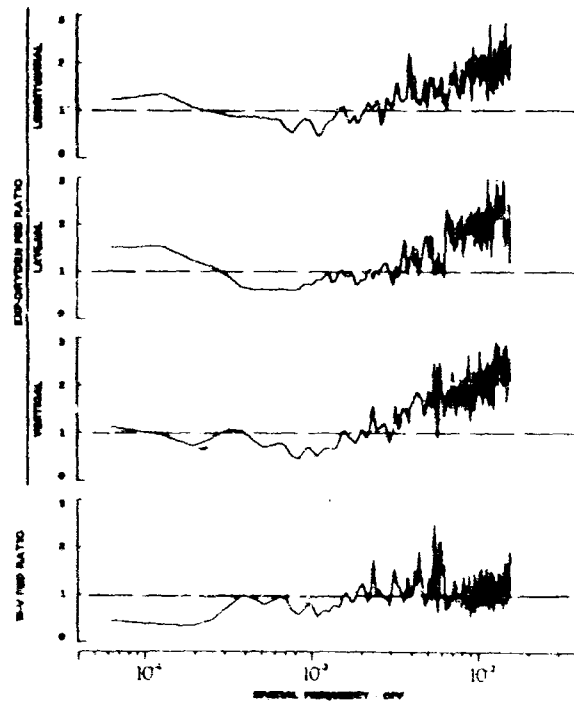
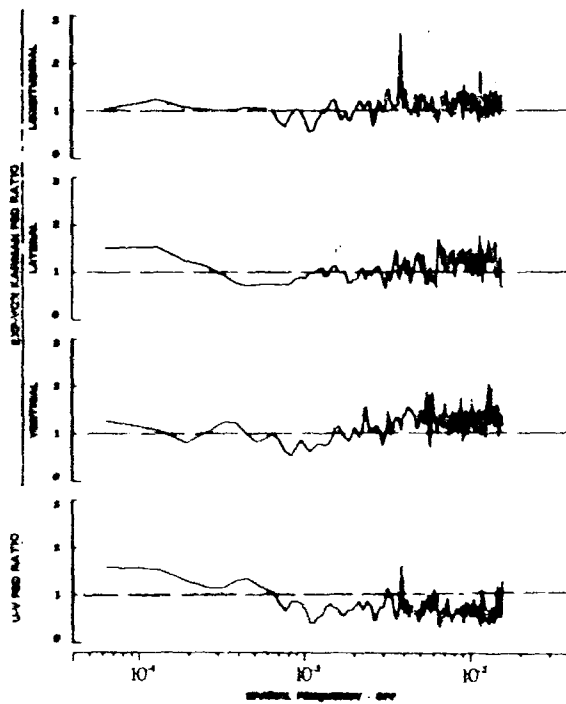
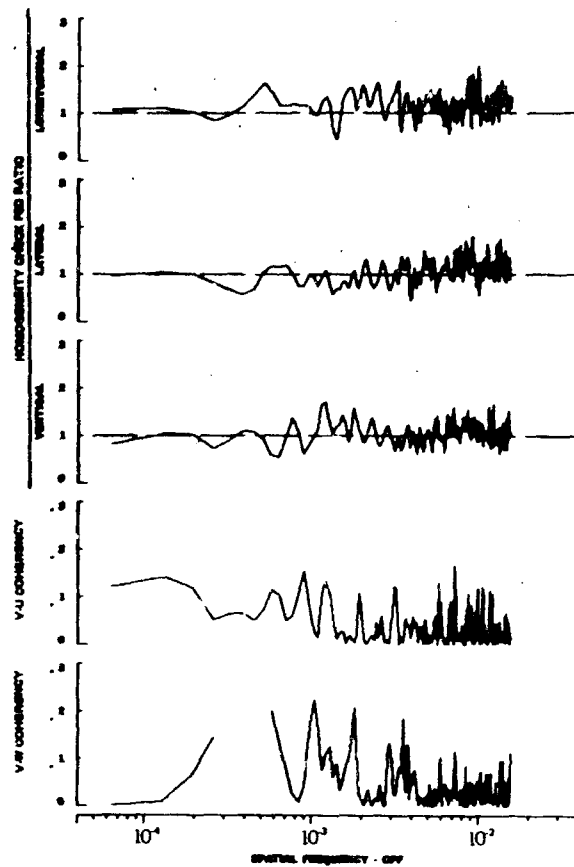
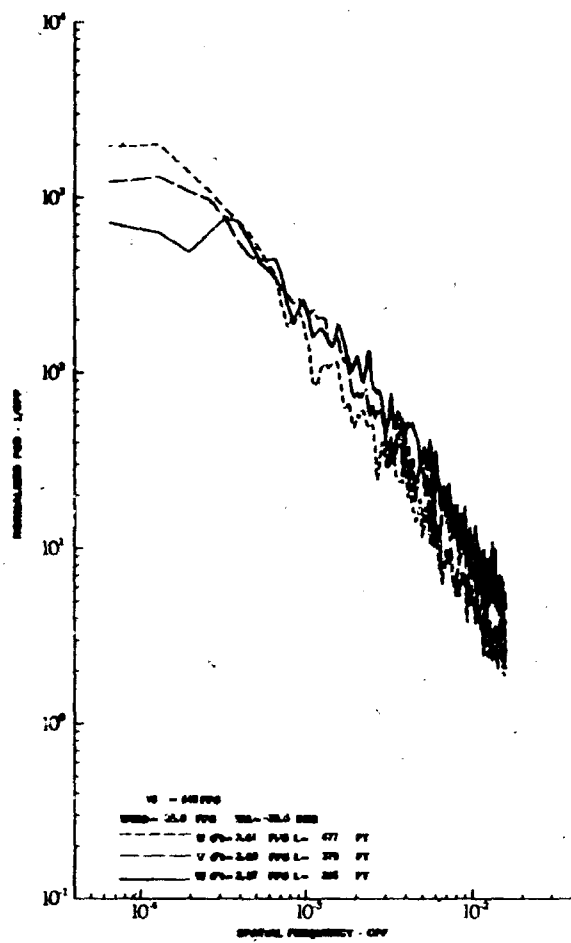
Turbulence Spectra Data For Test 32, Log 6, Category 424324



Turbulence Spectra Data For Test 32, Leg 7, Category 424324



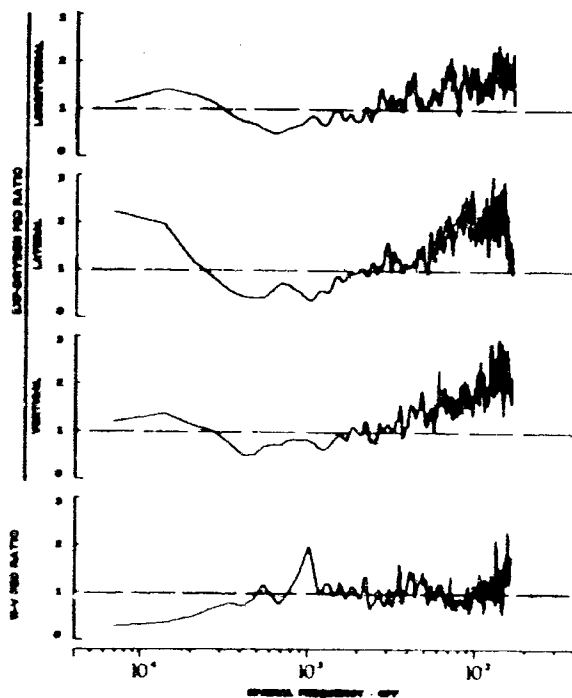
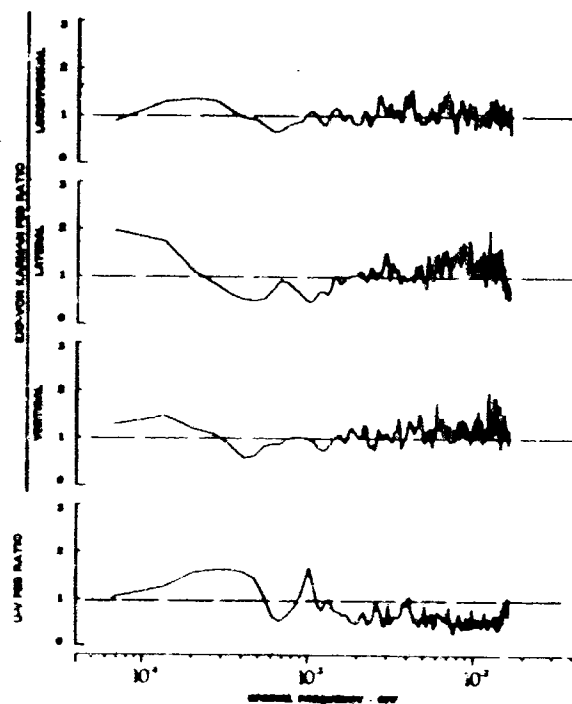
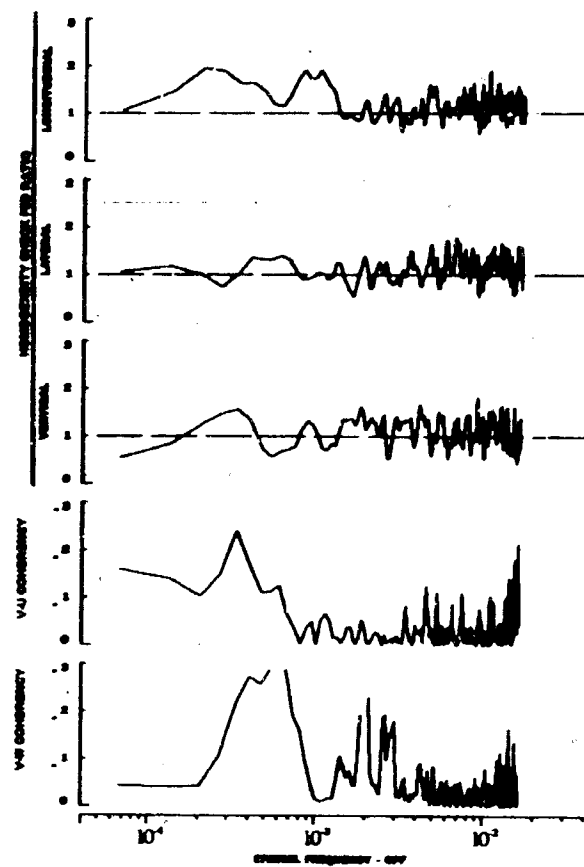
Turbulence Spectra Data For Test 34, Log 2, Category 411224



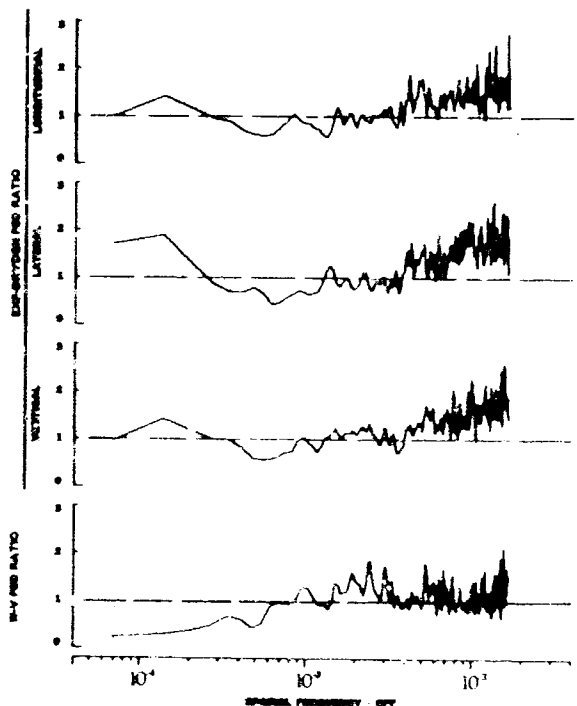
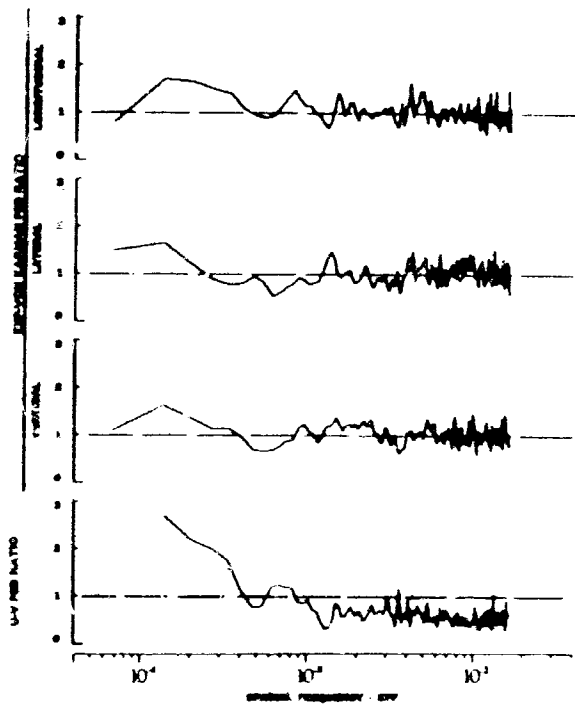
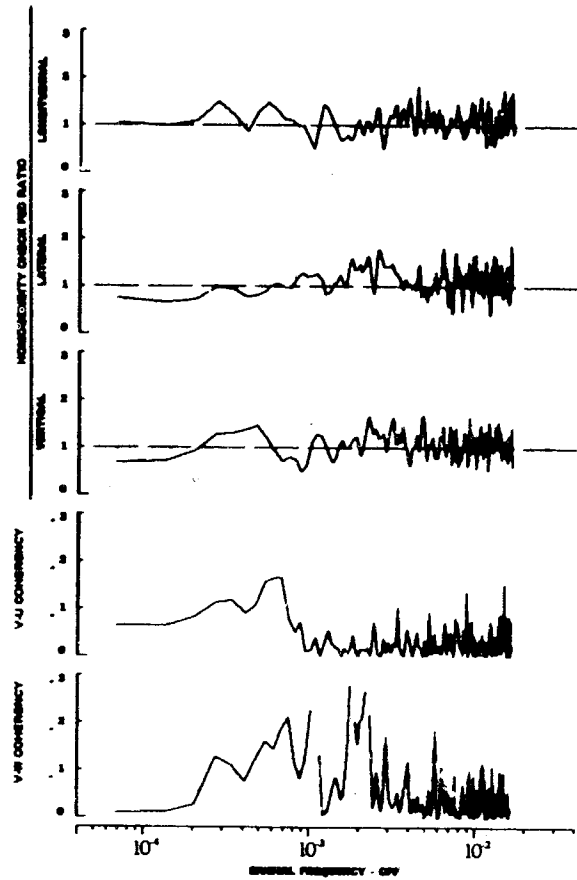
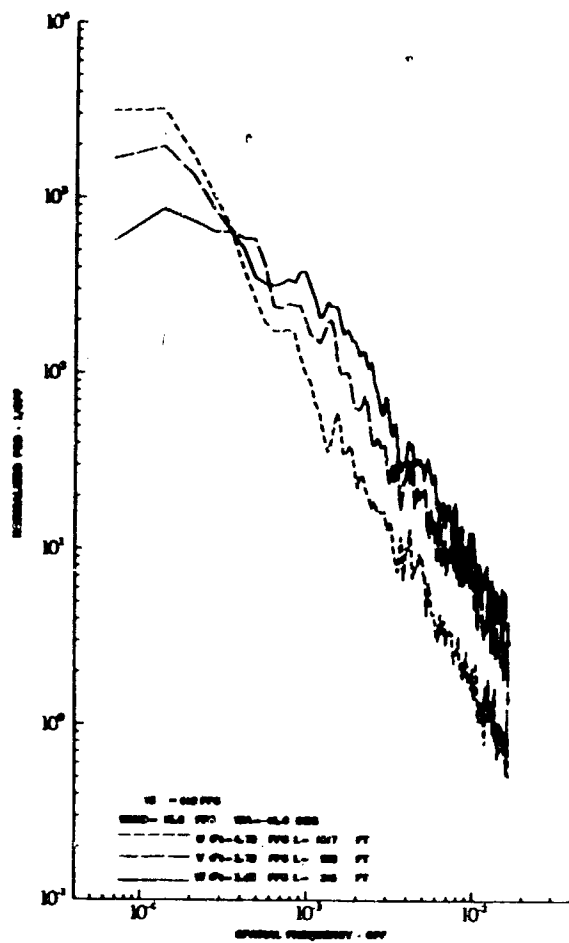
Turbulence Spectra Data For Test 34, Leg 4, Category 412224



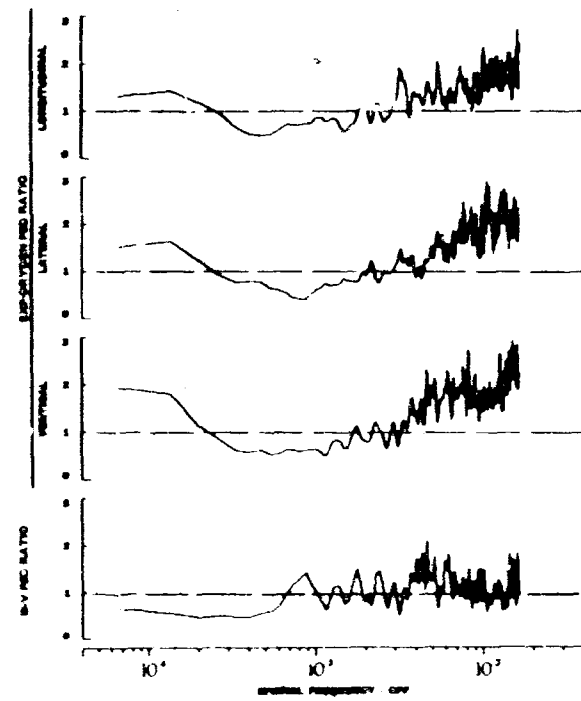
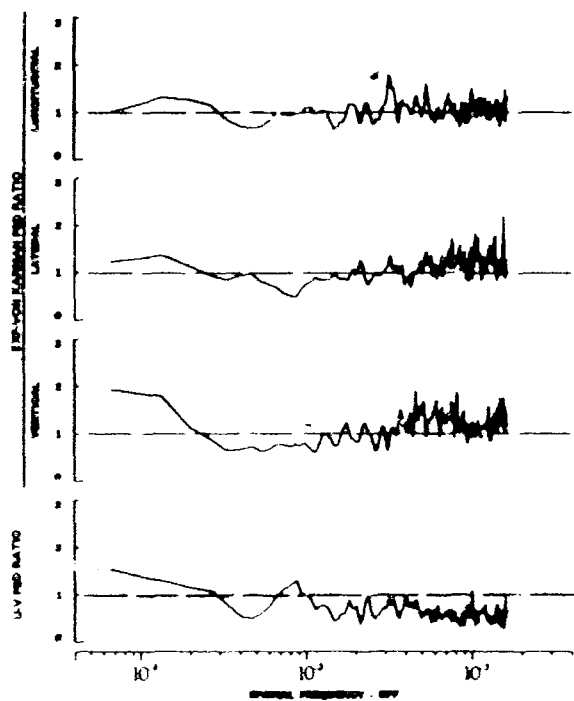
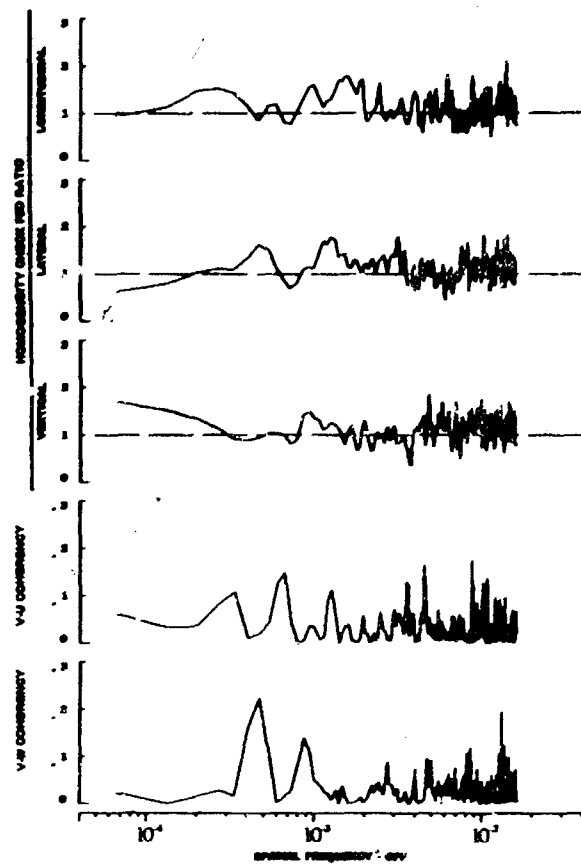
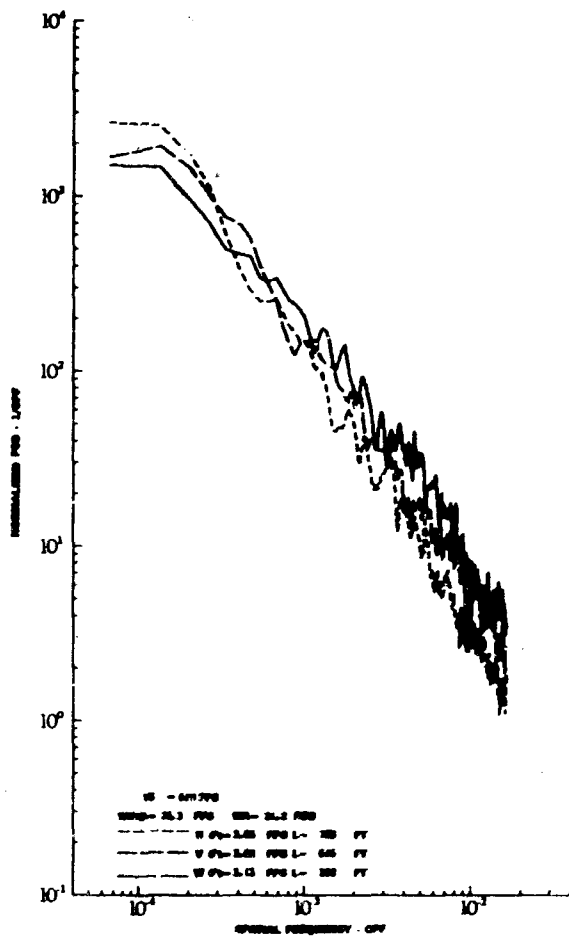




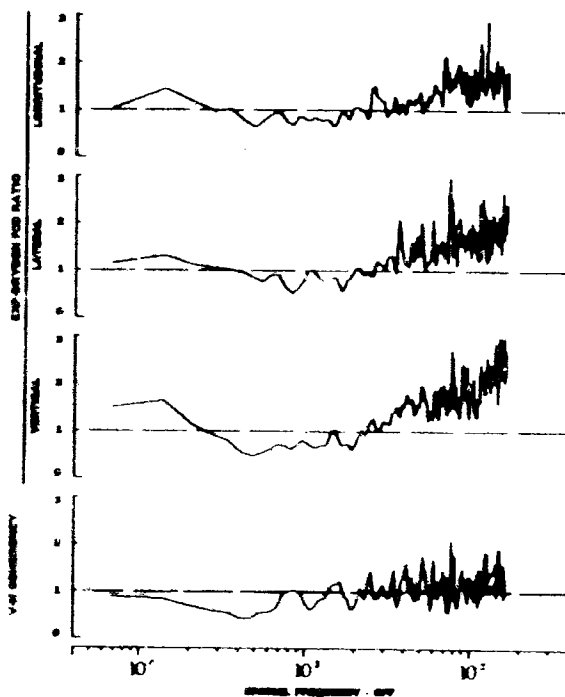
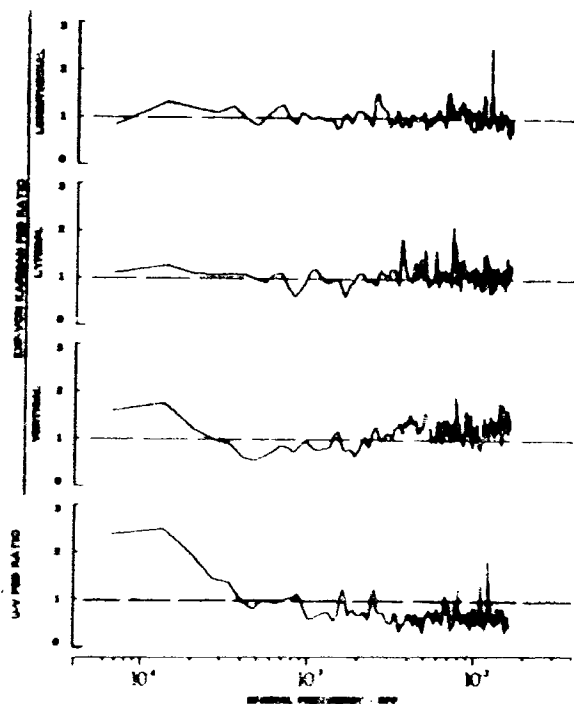
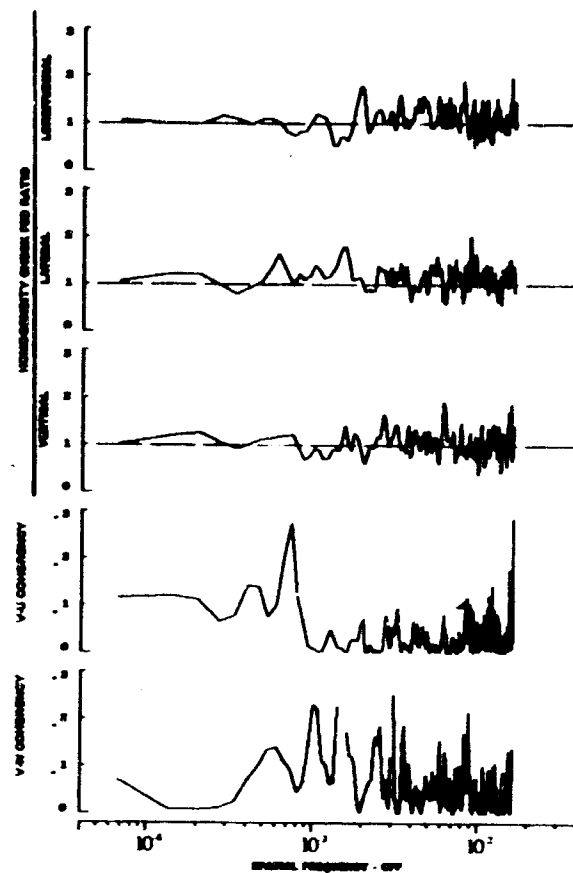
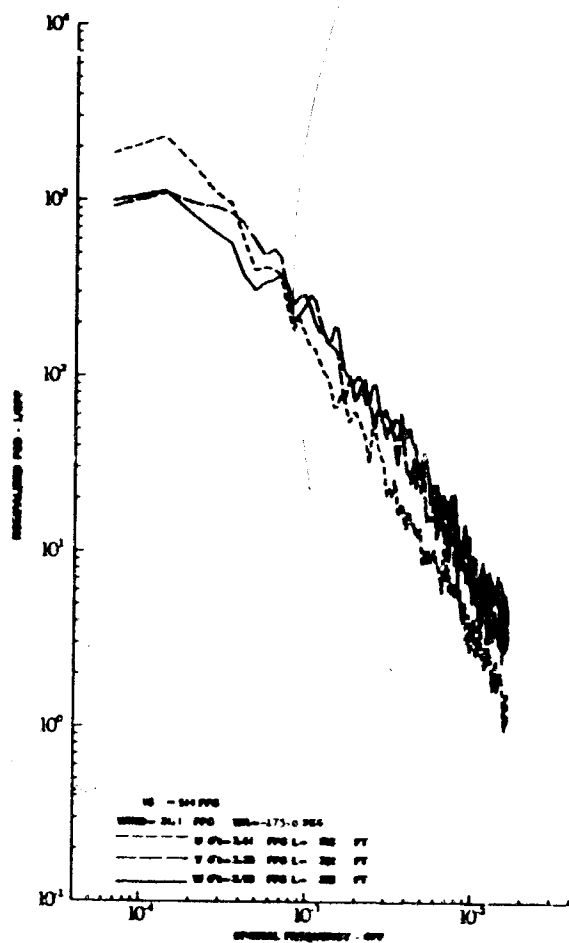
**Turbulence Spectra Data For Test 35, Log 1, Category 411324**



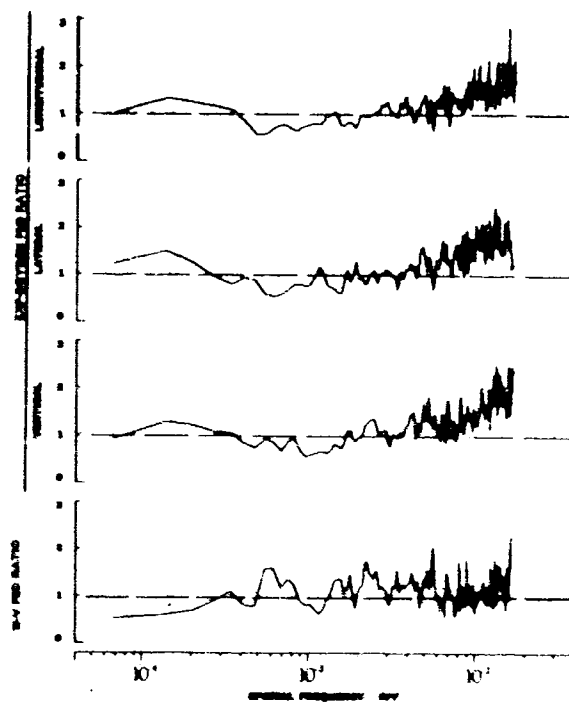
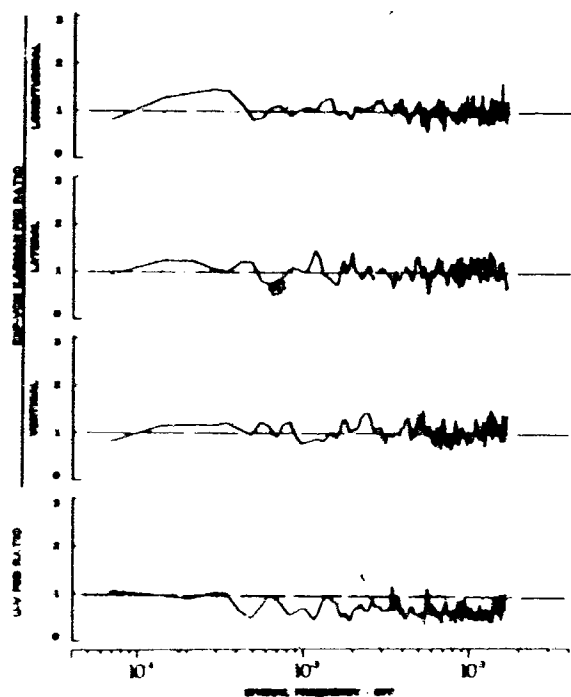
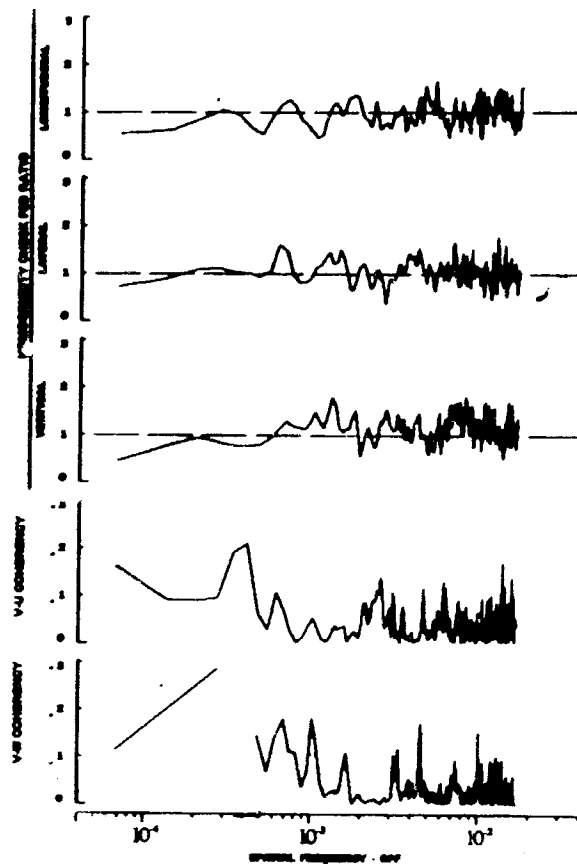
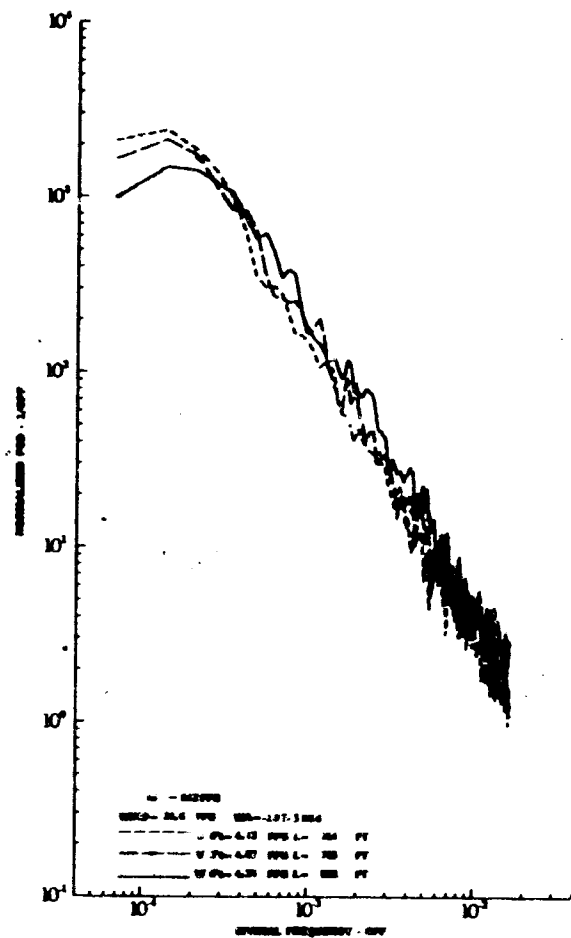
Turbulence Spectra Data For Test 35, Leg 3, Category 413324



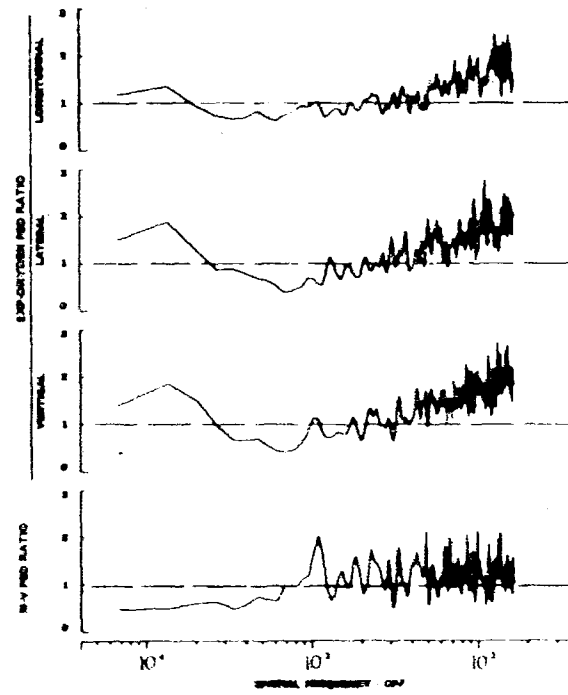
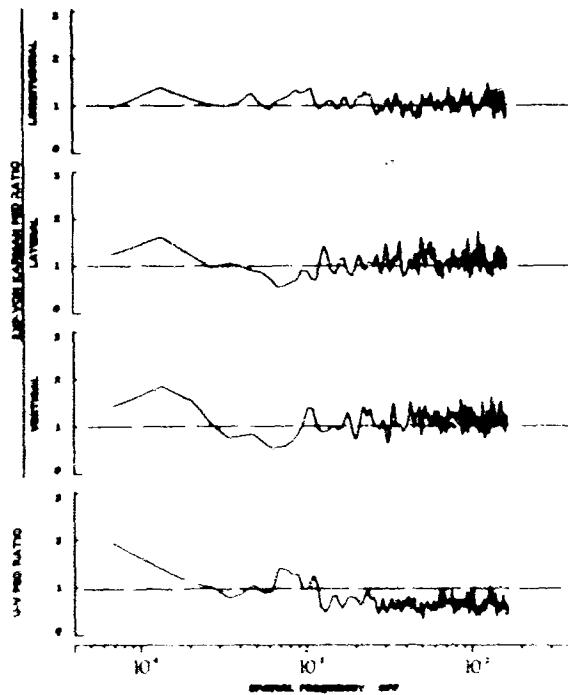
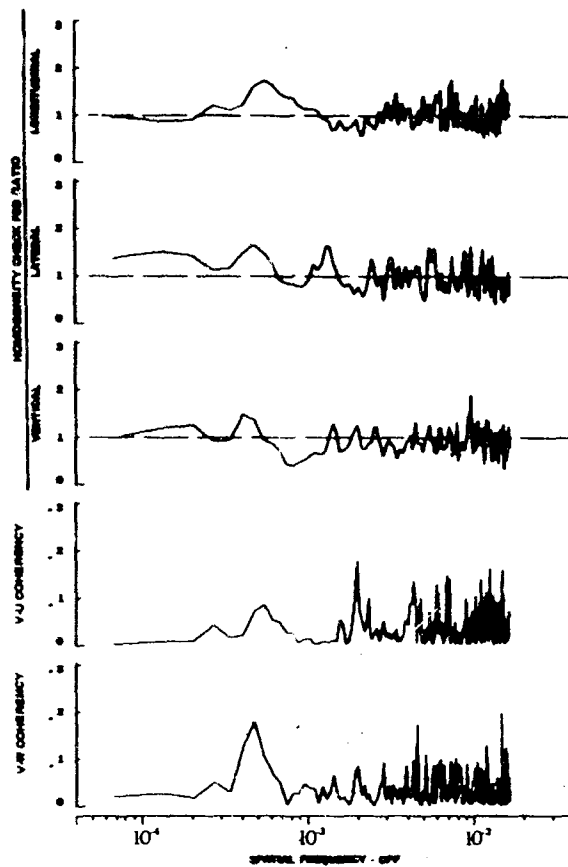
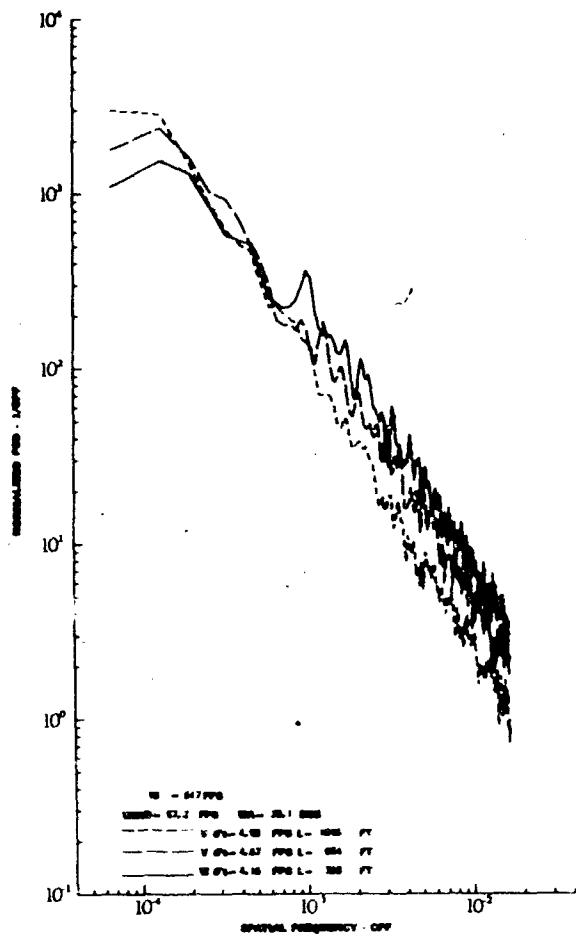
Turbulence Spectra Data For Test 35, Log 5, Category 413324



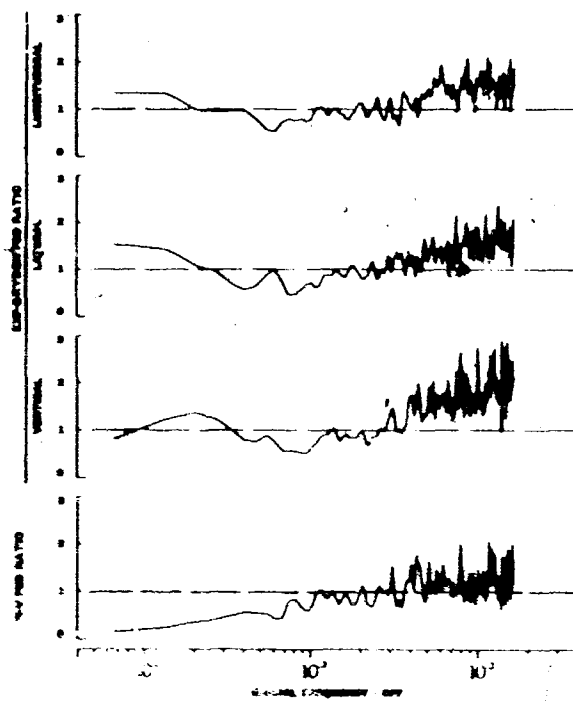
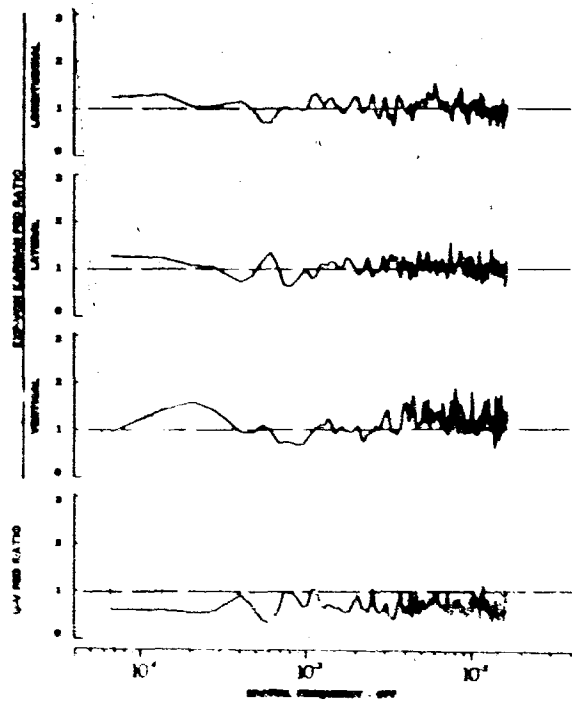
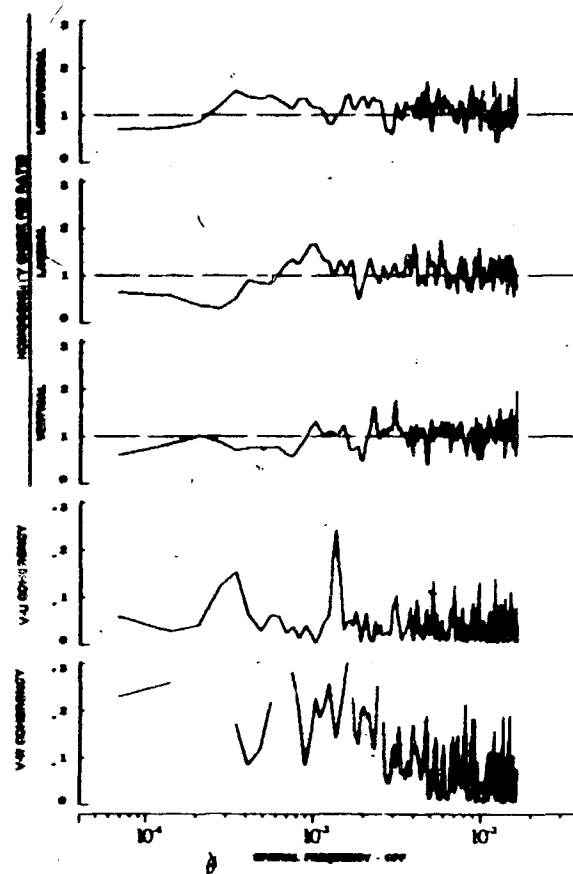
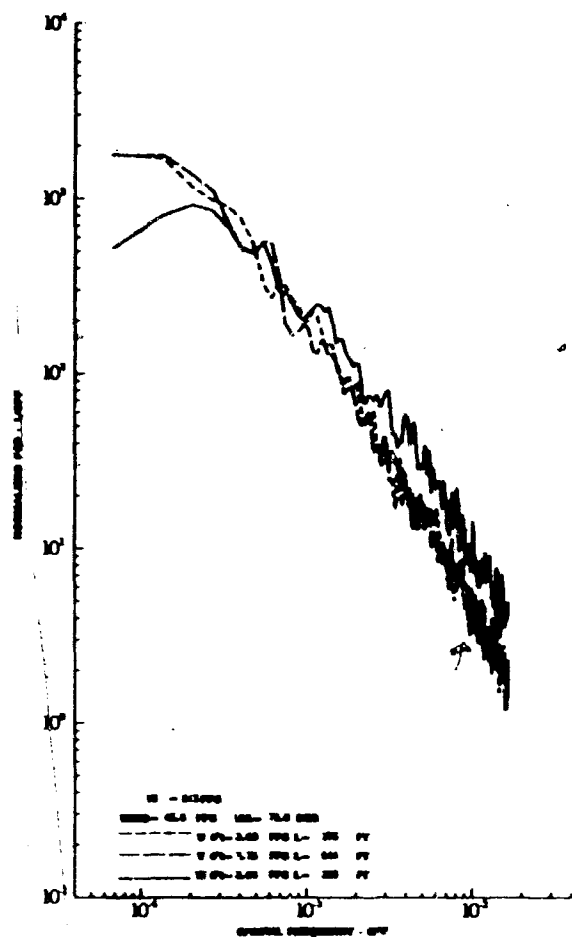
Turbulence Spectra Data For Test 37, Log 7, Category 422224



Turbulence Spectra Data For Test 38, Leg 2, Category 424324



Turbulence Spectra Data For Test 38, Leg 4, Category 423324

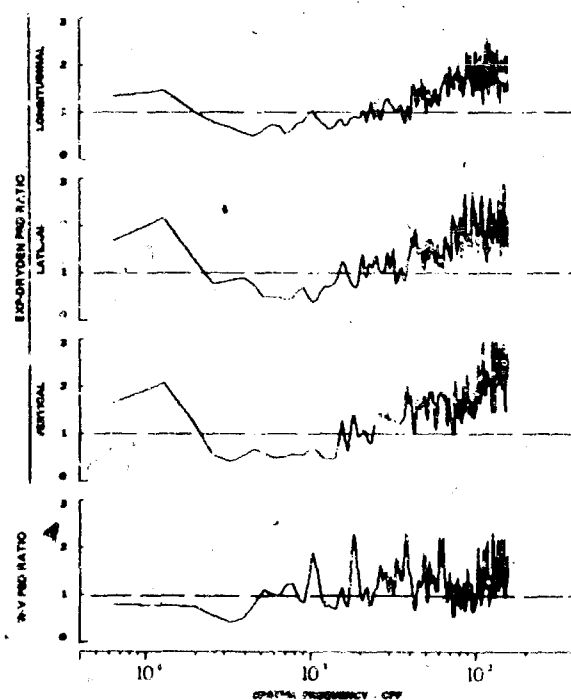
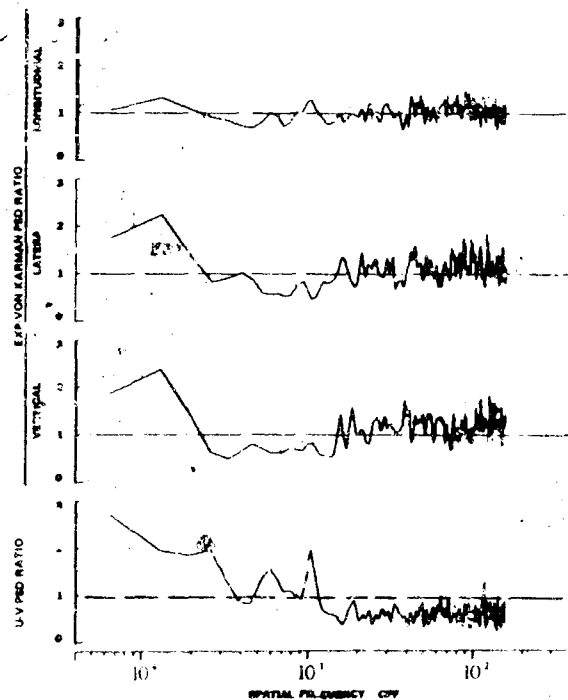
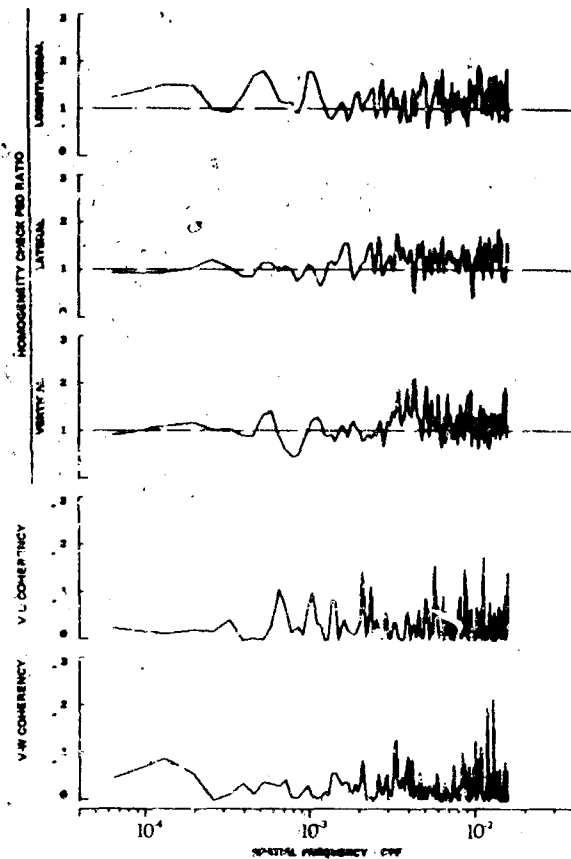
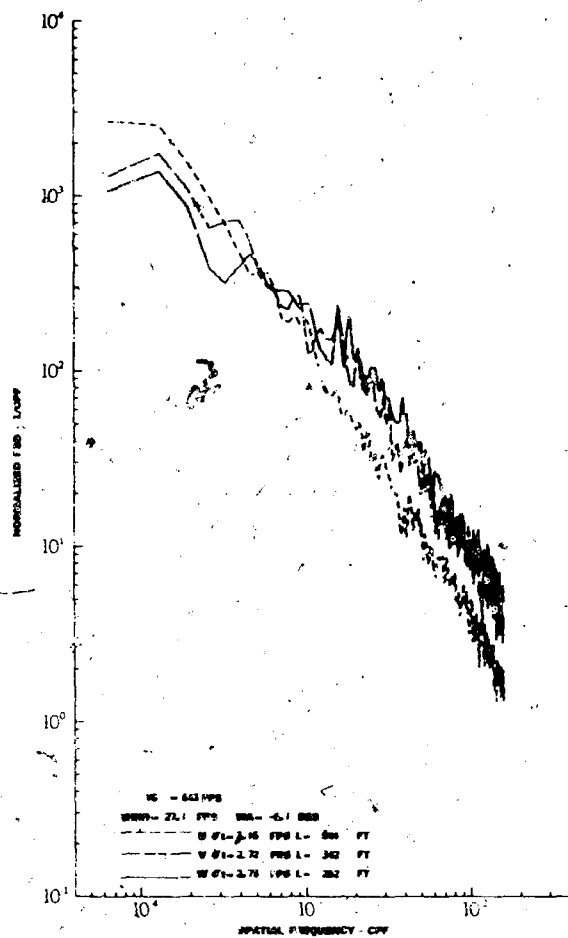


Turbulence Spectra Data For Test 38, Log 6, Category 423324

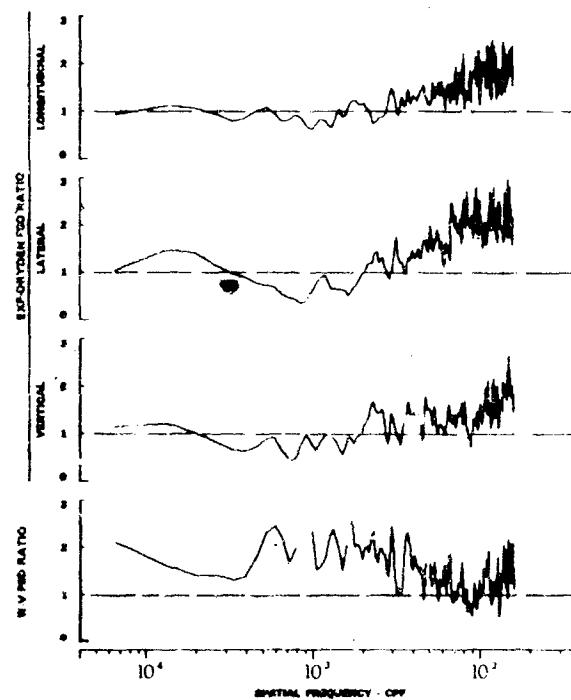
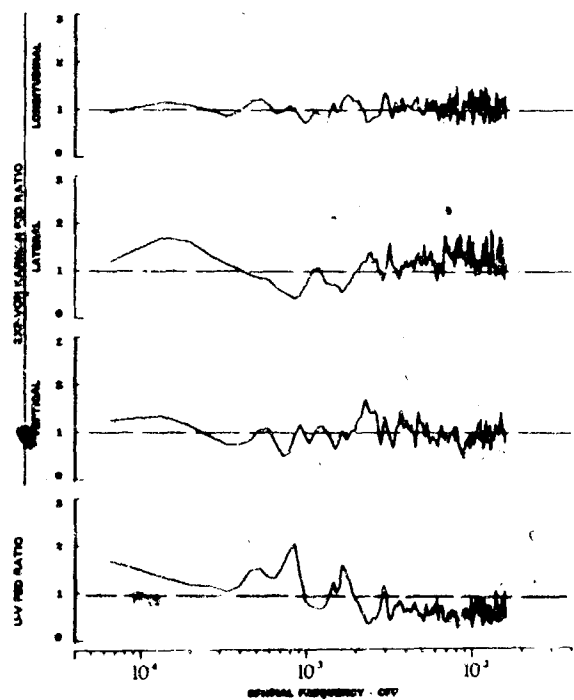
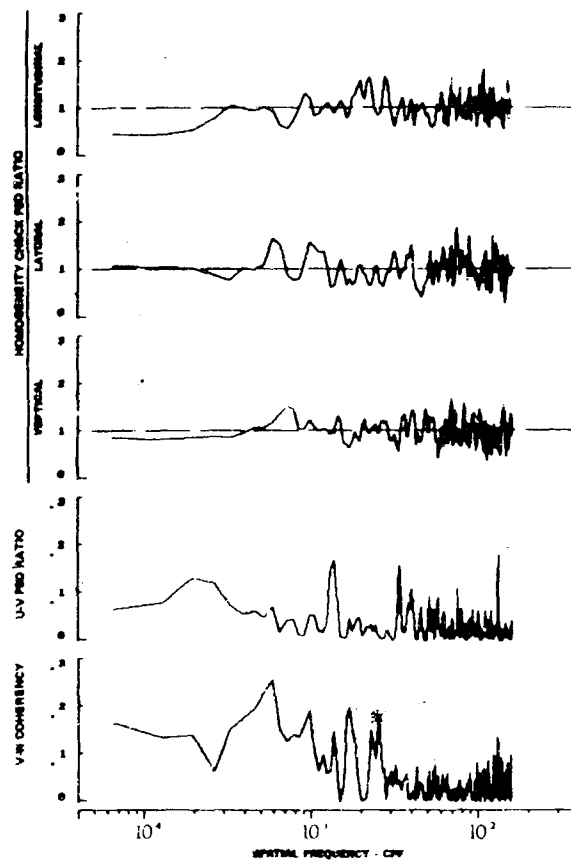
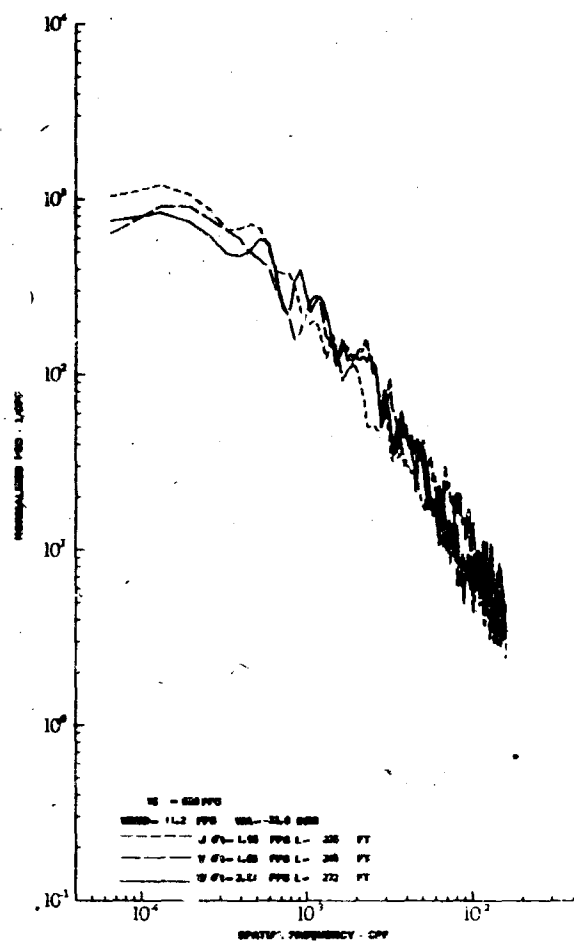




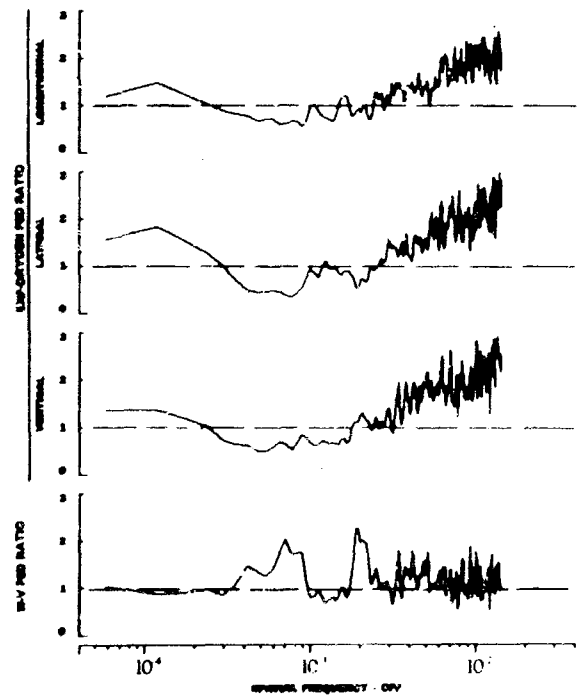
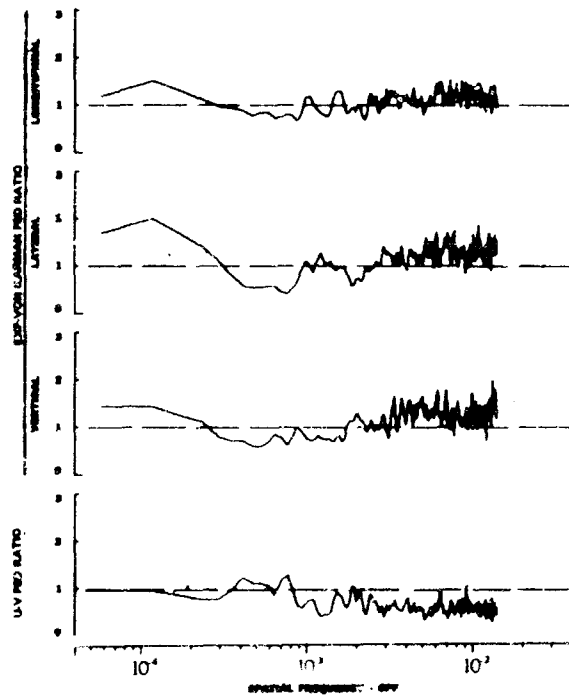
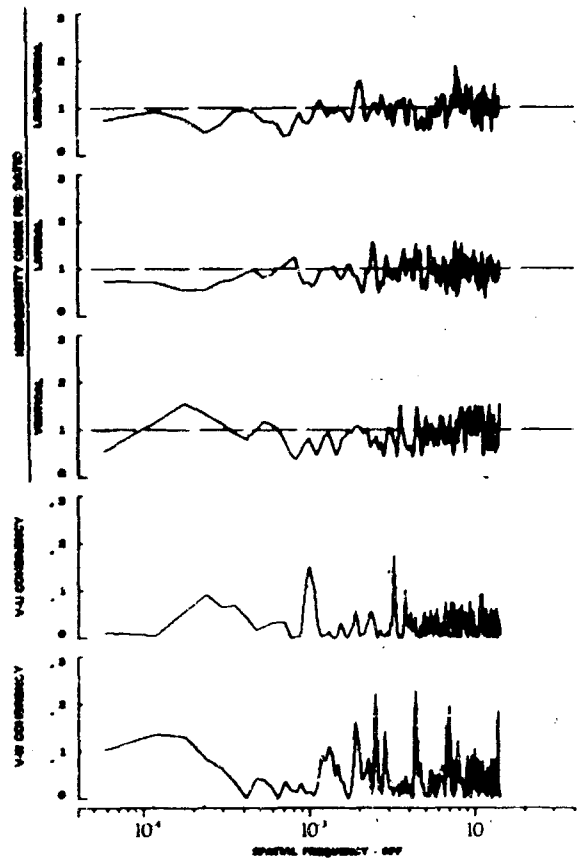
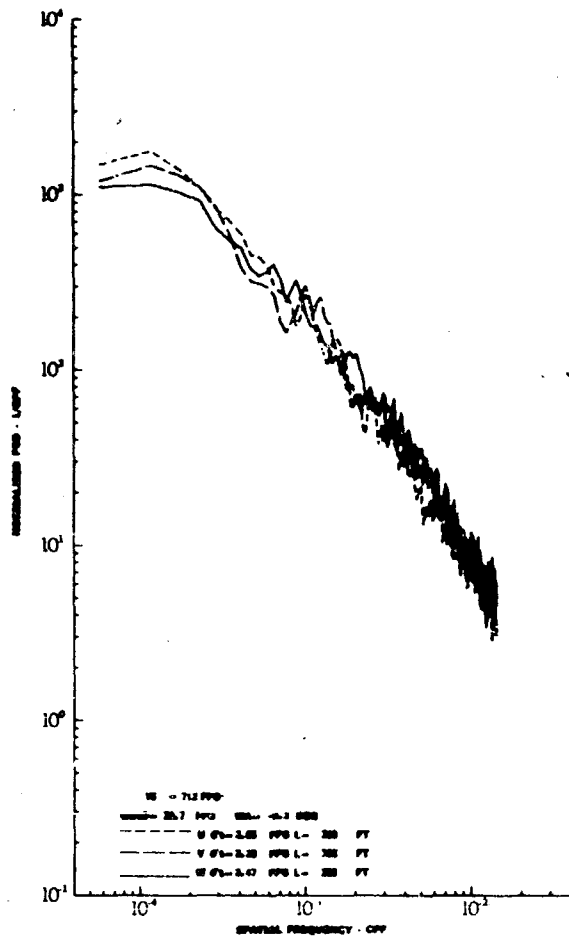




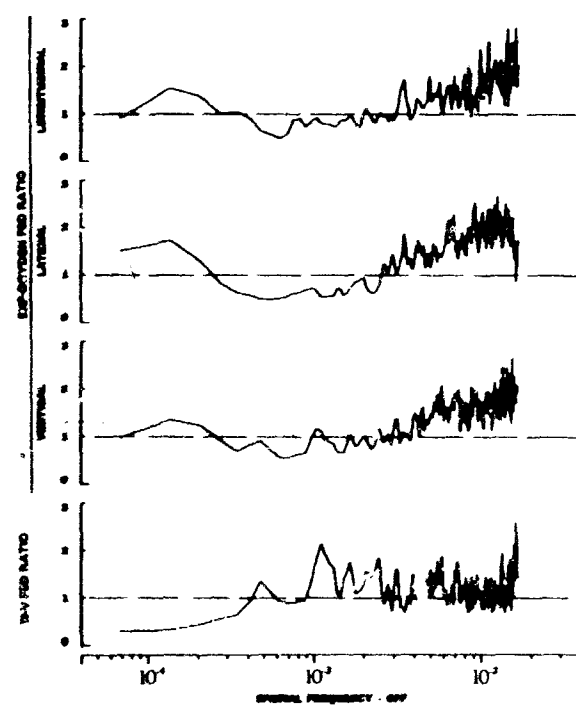
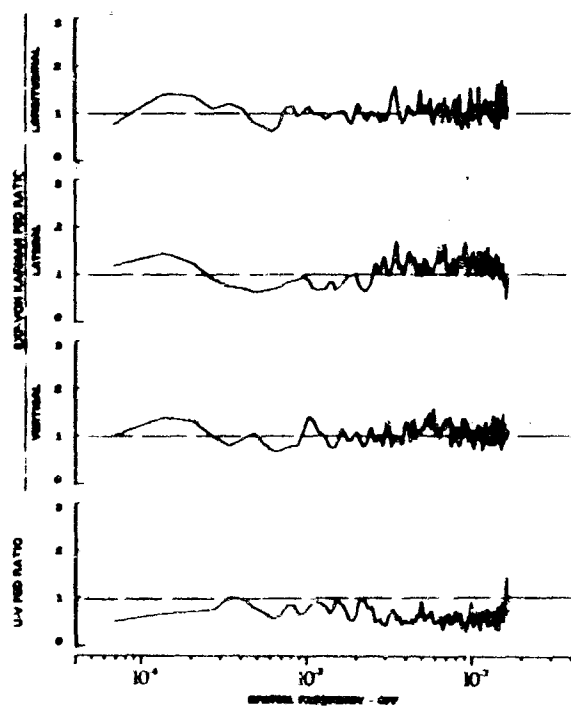
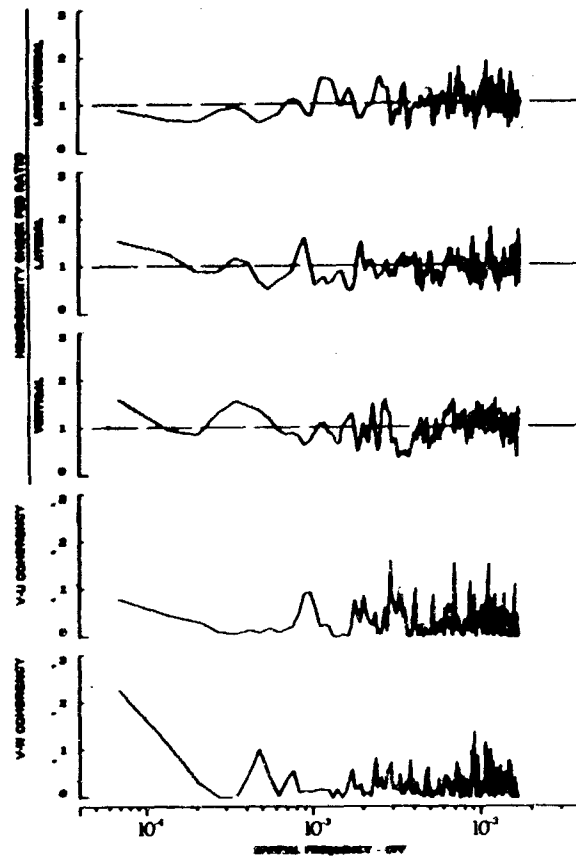
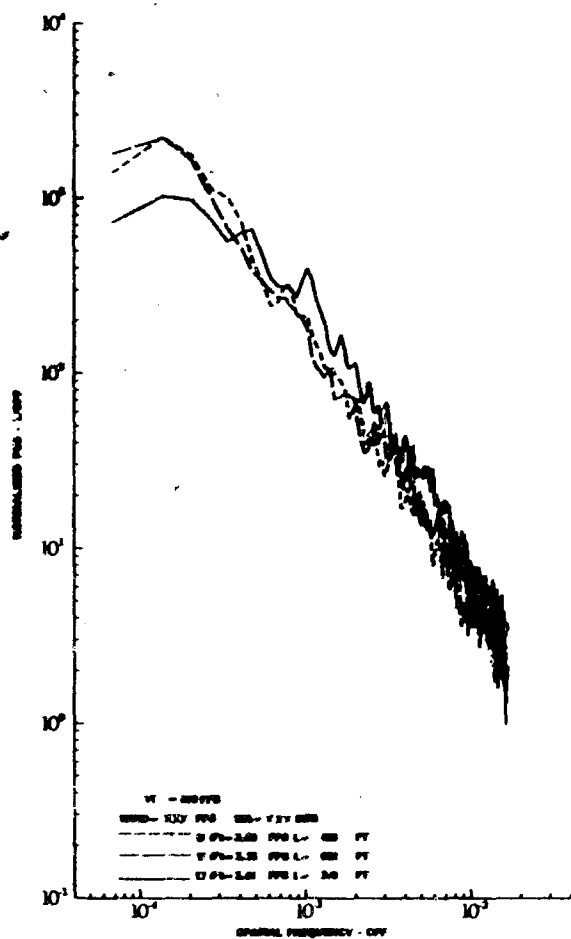
Turbulence Spectra Data For Test 40, Leg 4, Category 412234



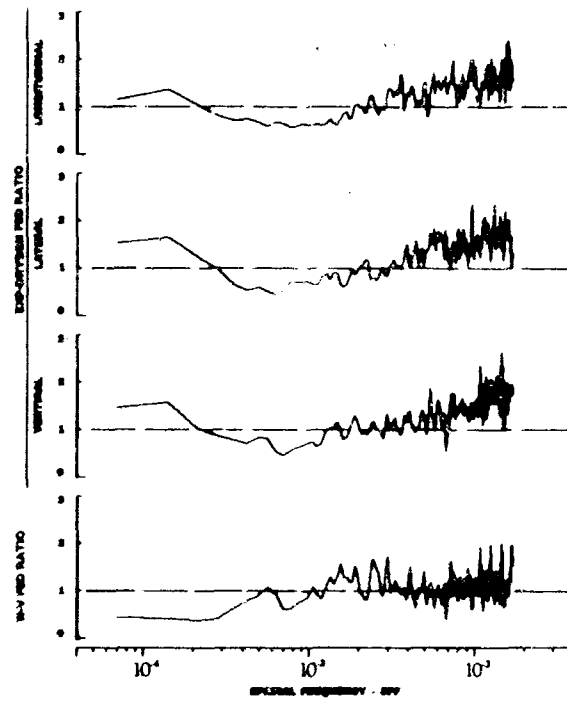
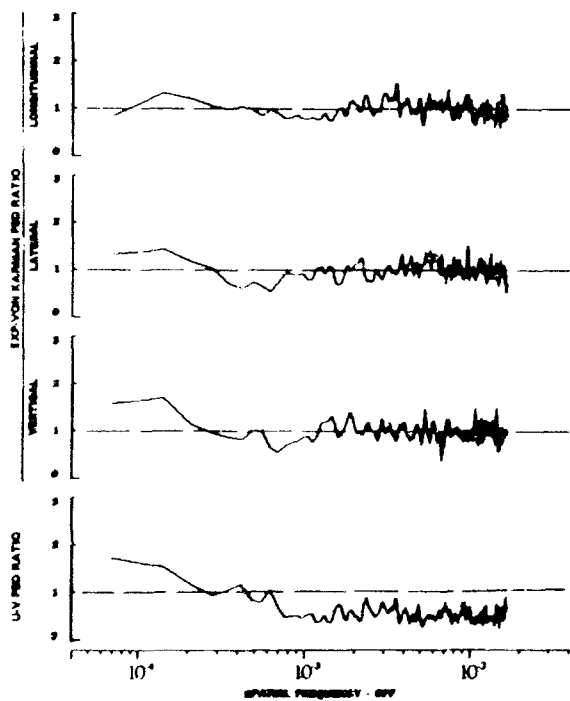
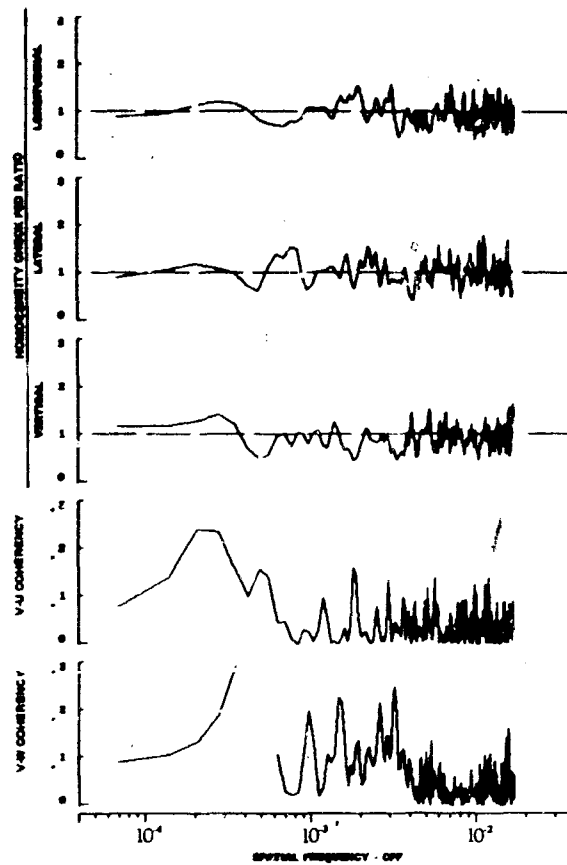
Turbulence Spectra Data For Test 40, Leg 6, Category 412234



Turbulence Spectra Data For Test 40, Leg 8, Category 412234

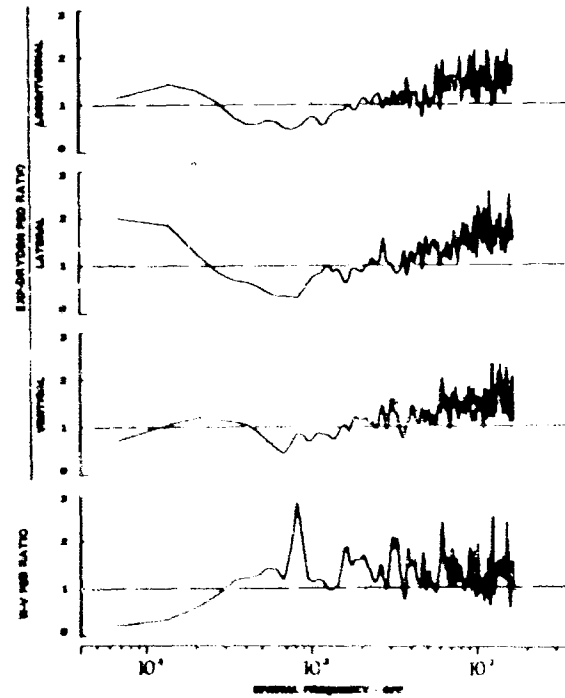
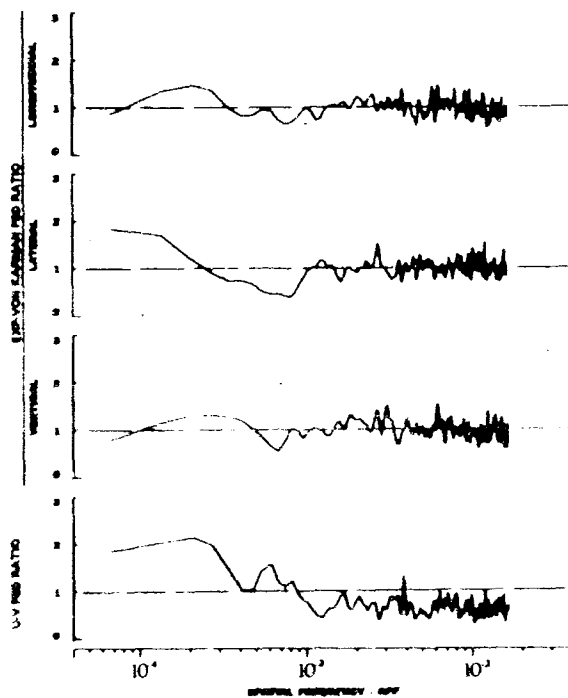
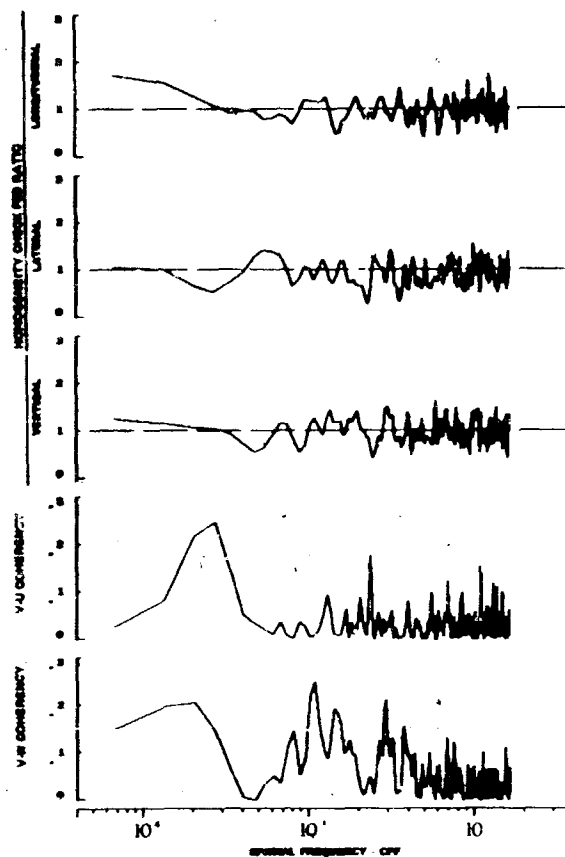
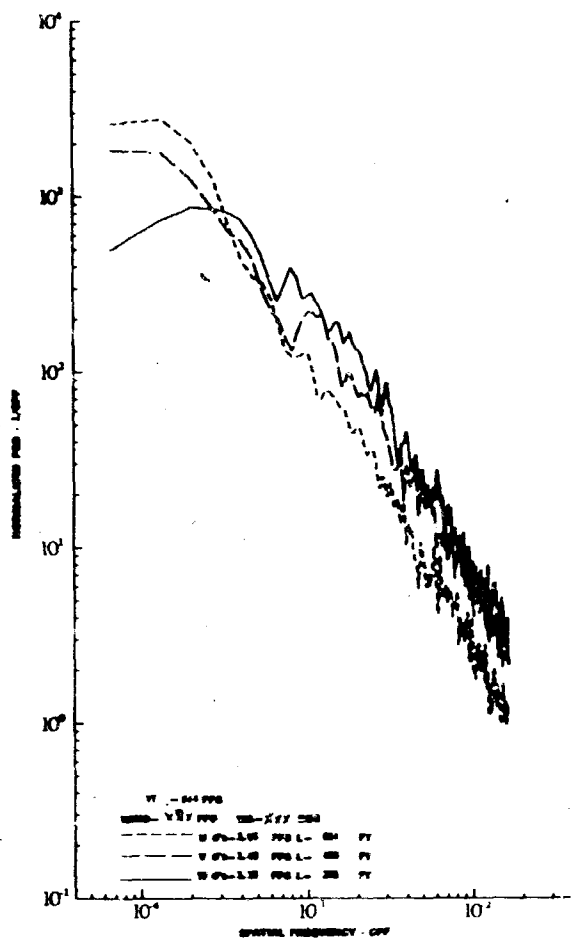


Turbulence Spectra Data For Test 41, Leg 1, Category 414324

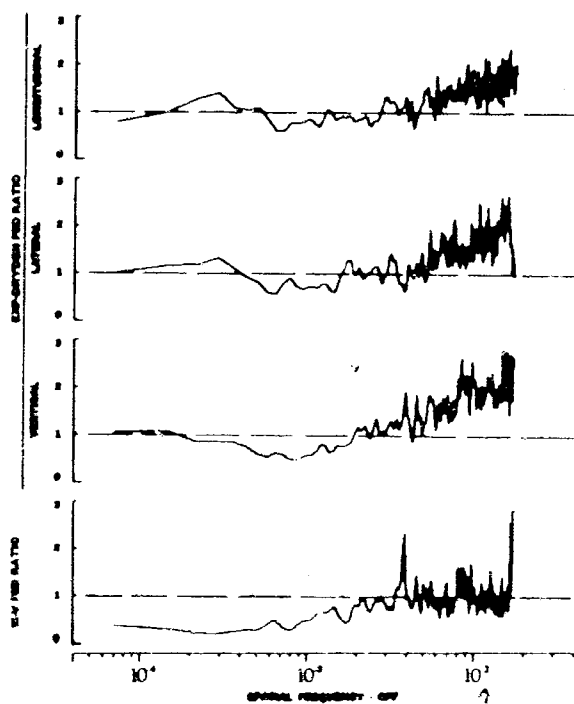
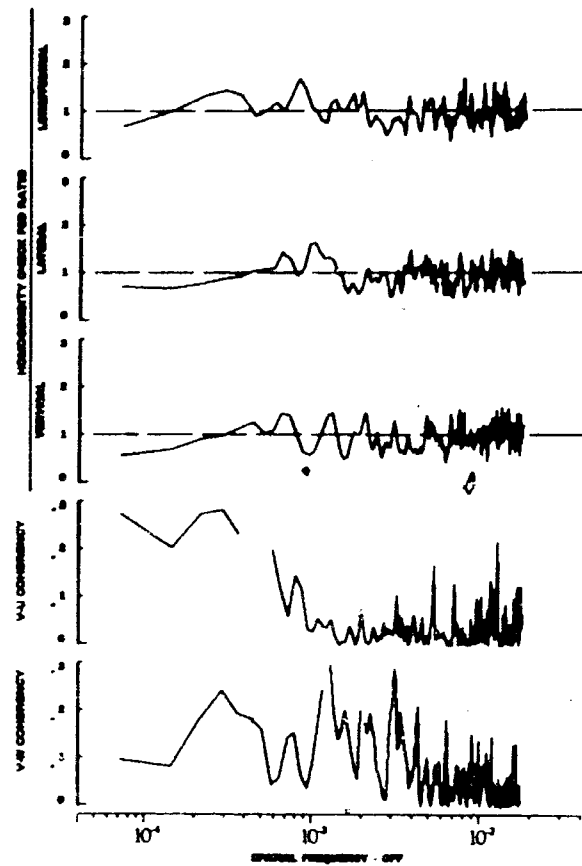


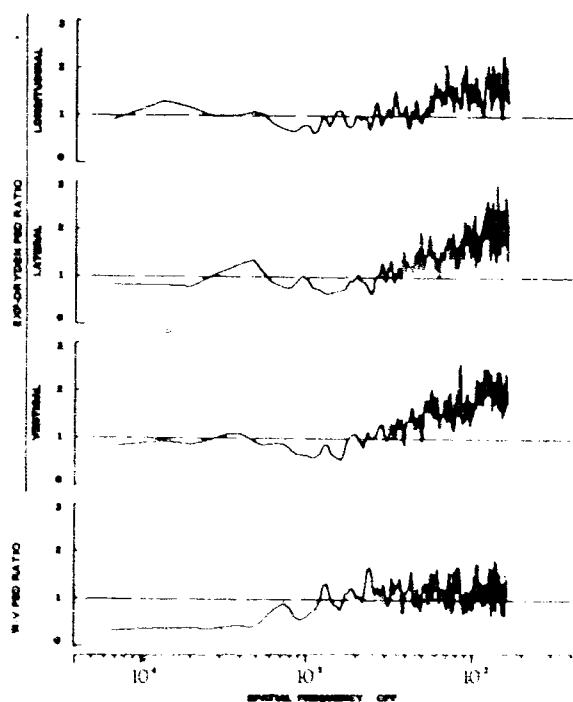
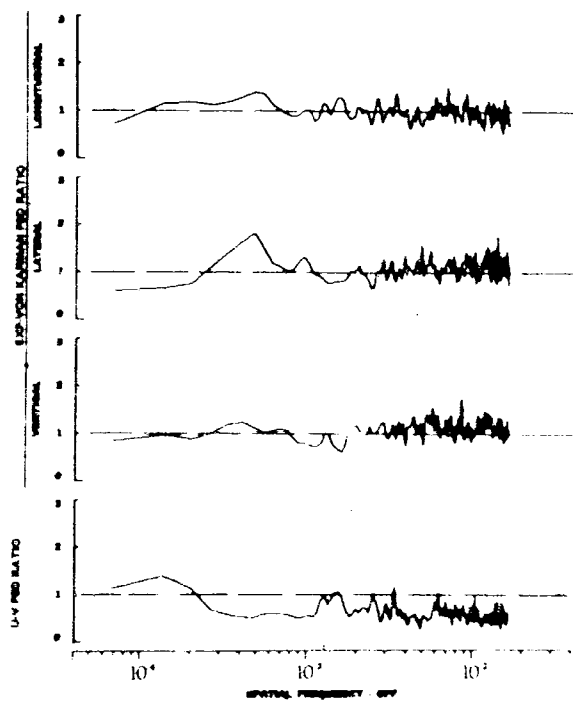
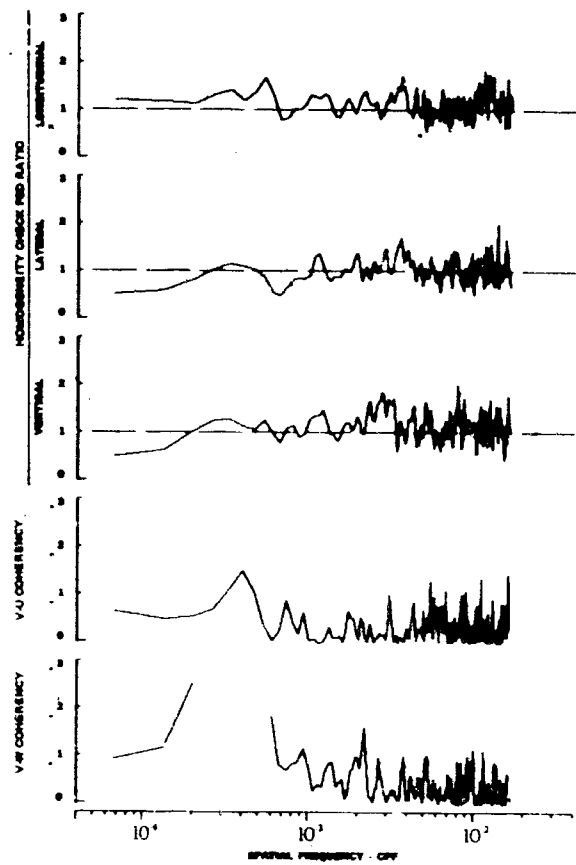




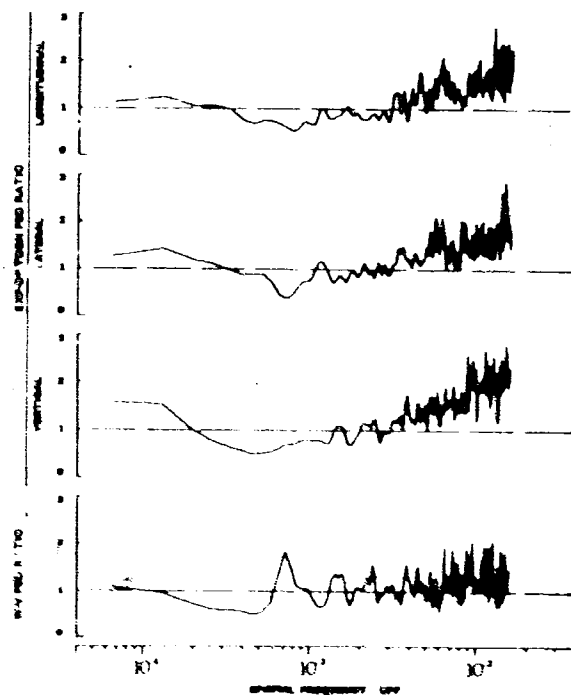
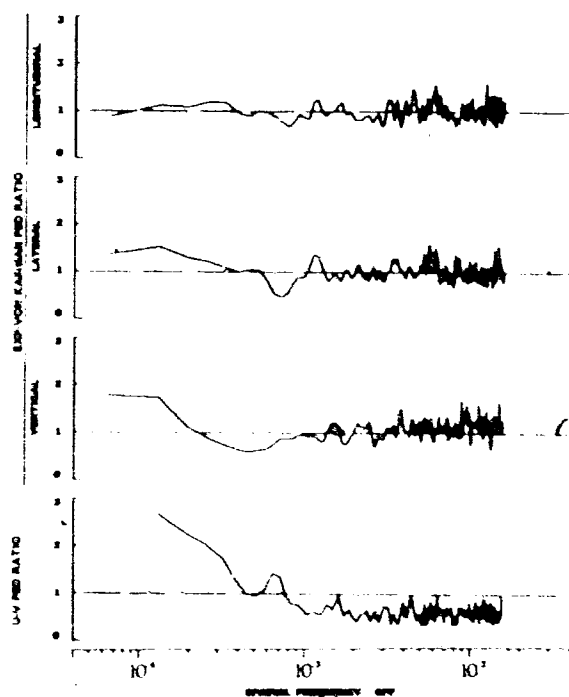
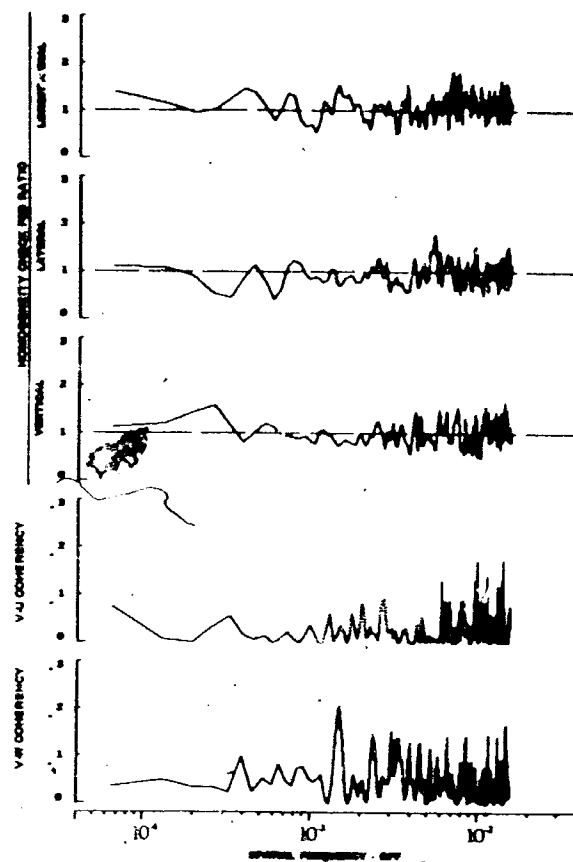
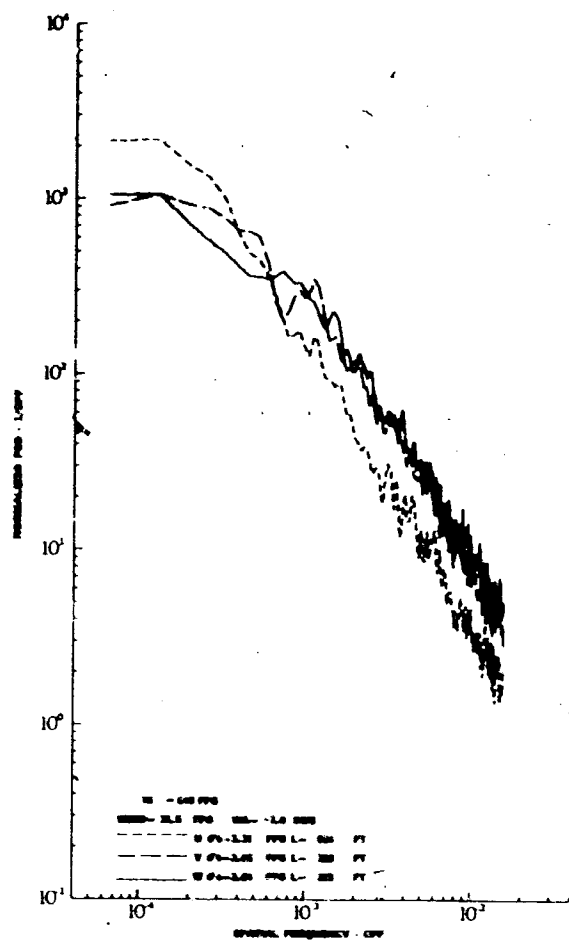


Turbulence Spectra Data For Test 41, Log 7, Category 413324

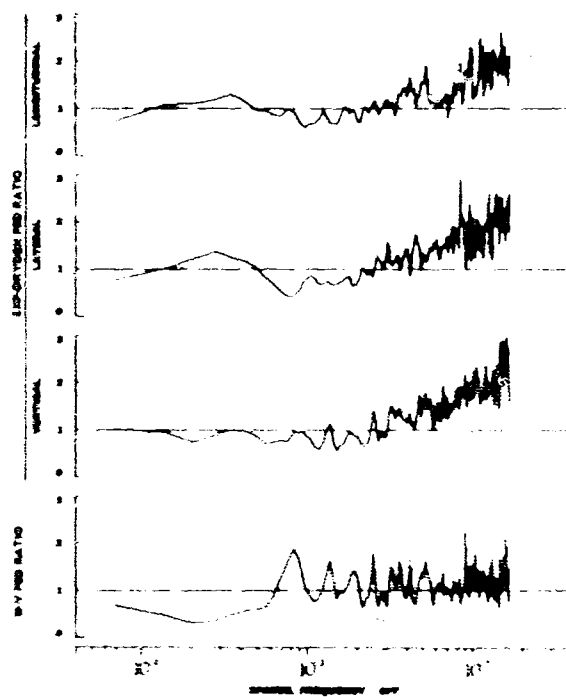
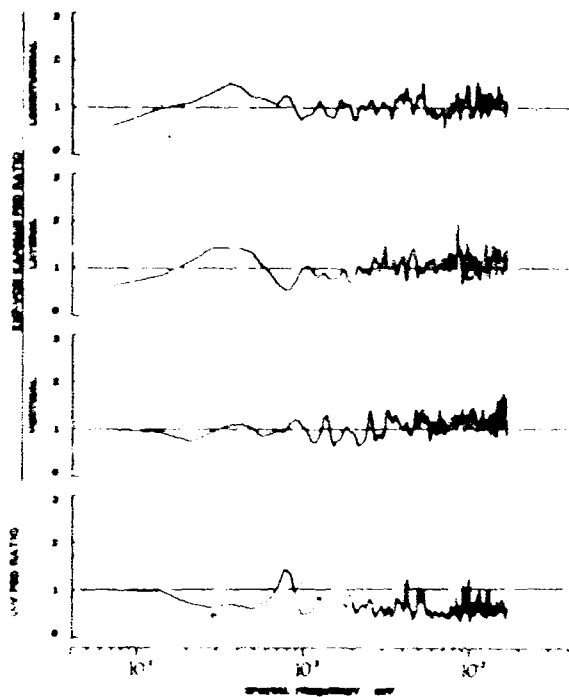
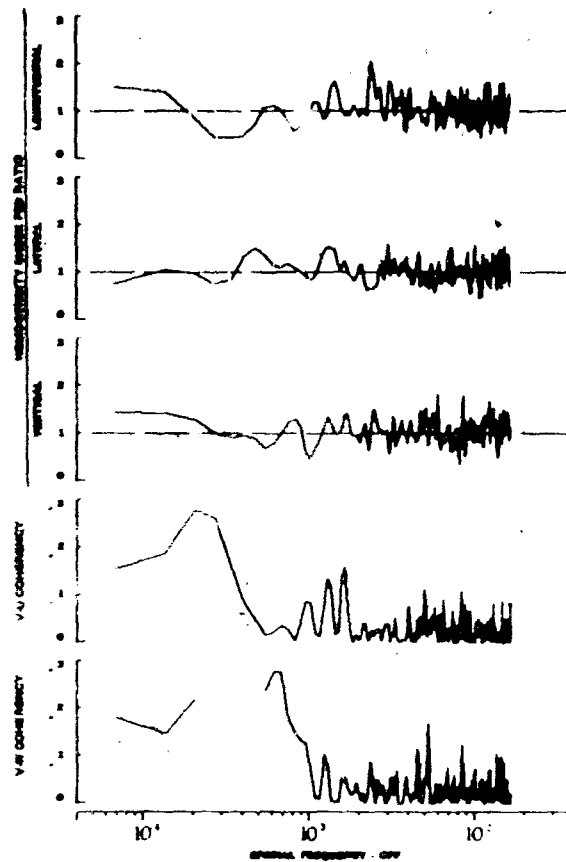
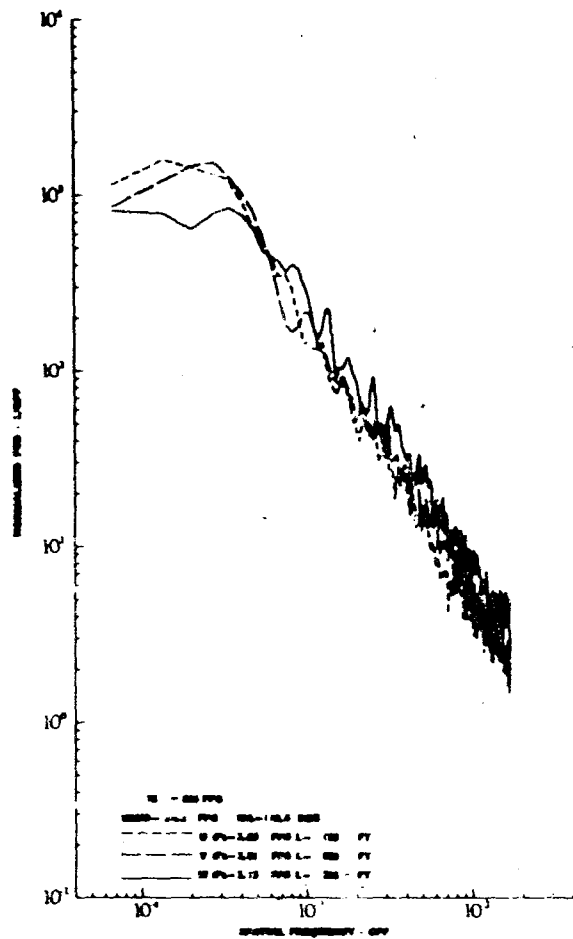




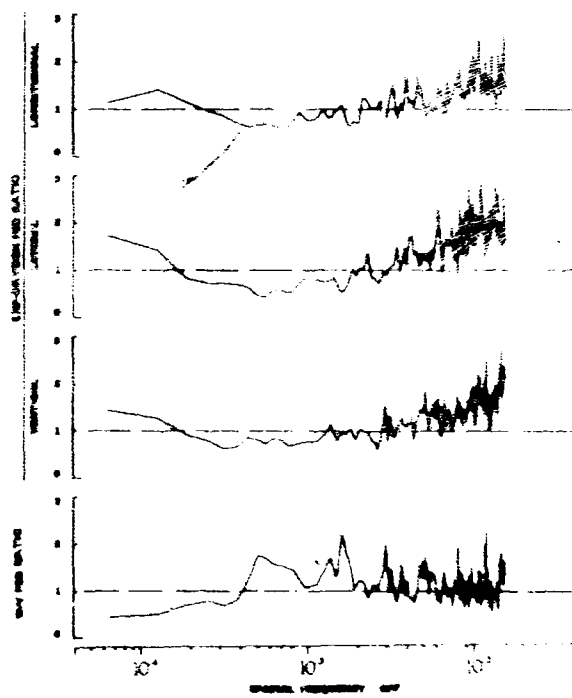
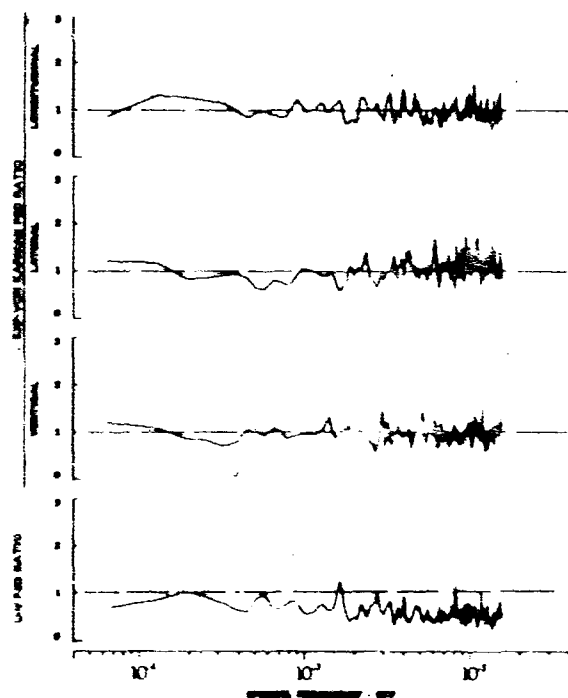
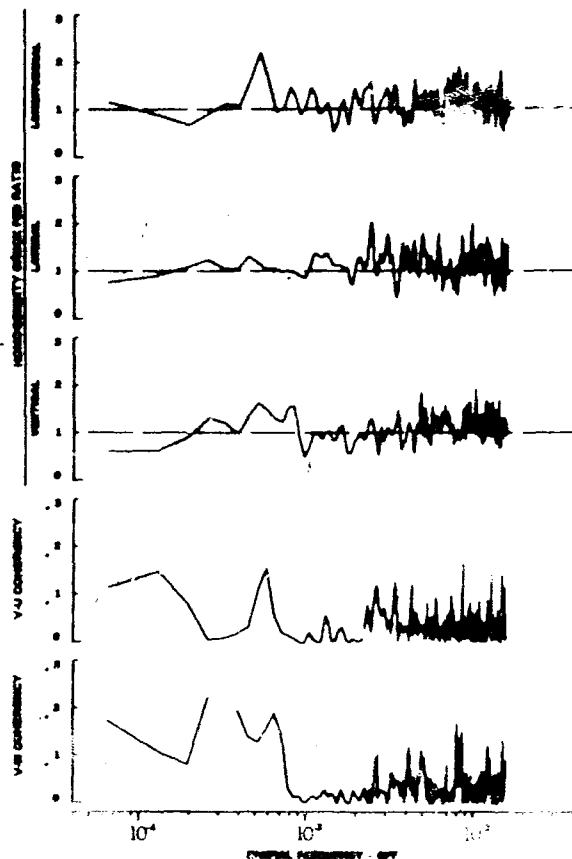
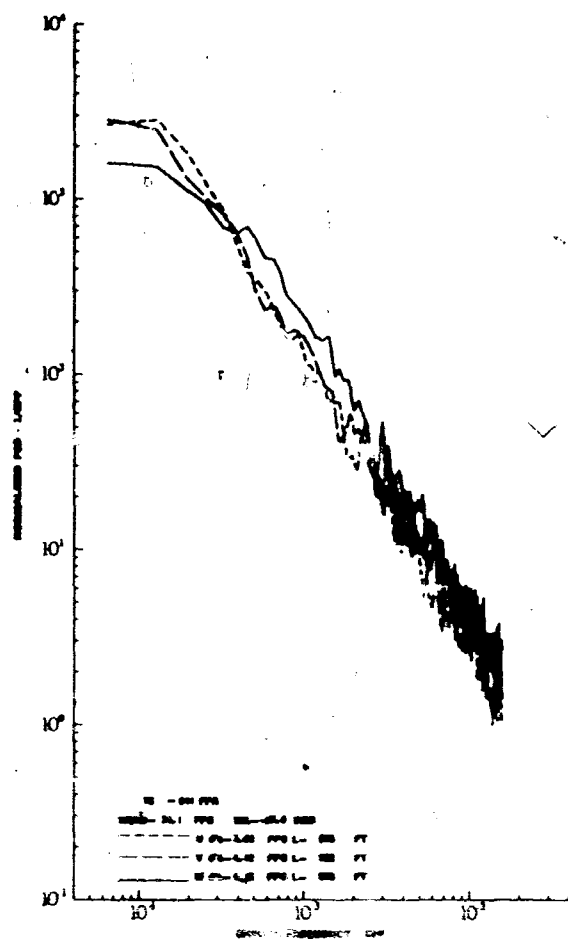
Turbulence Spectra Data For Test 43, Leg 3, Category 424224



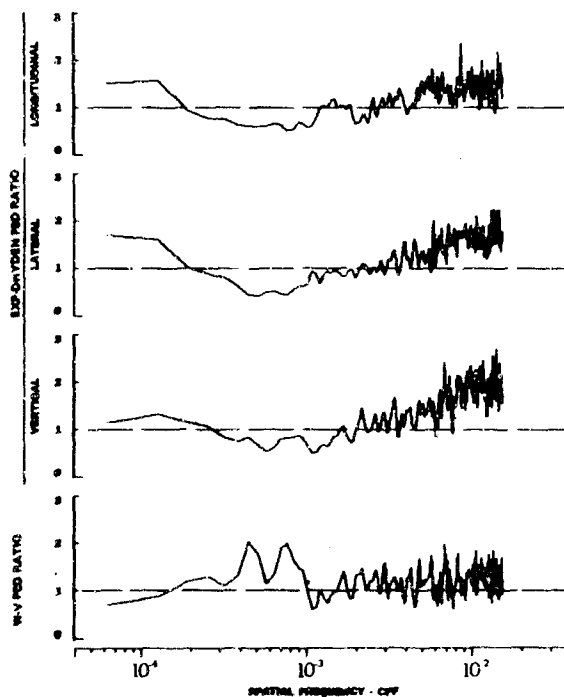
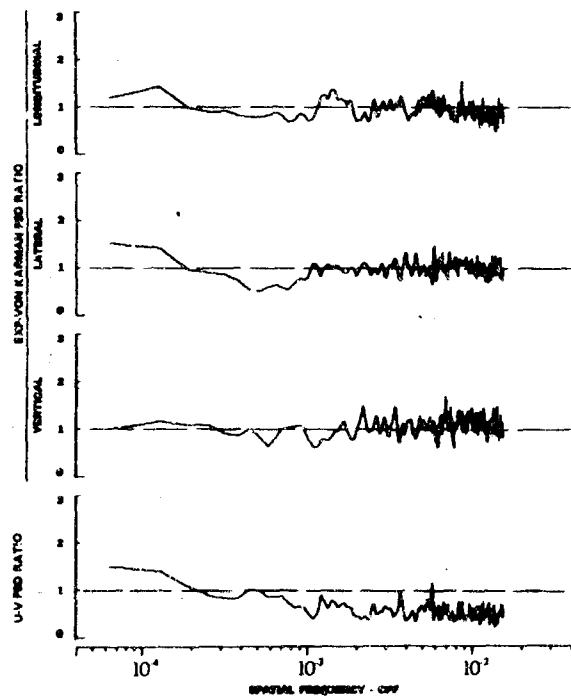
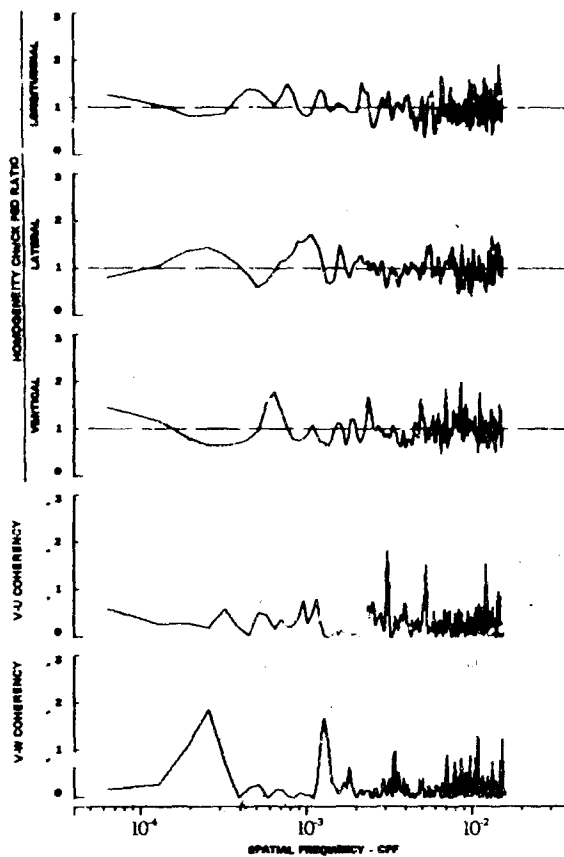
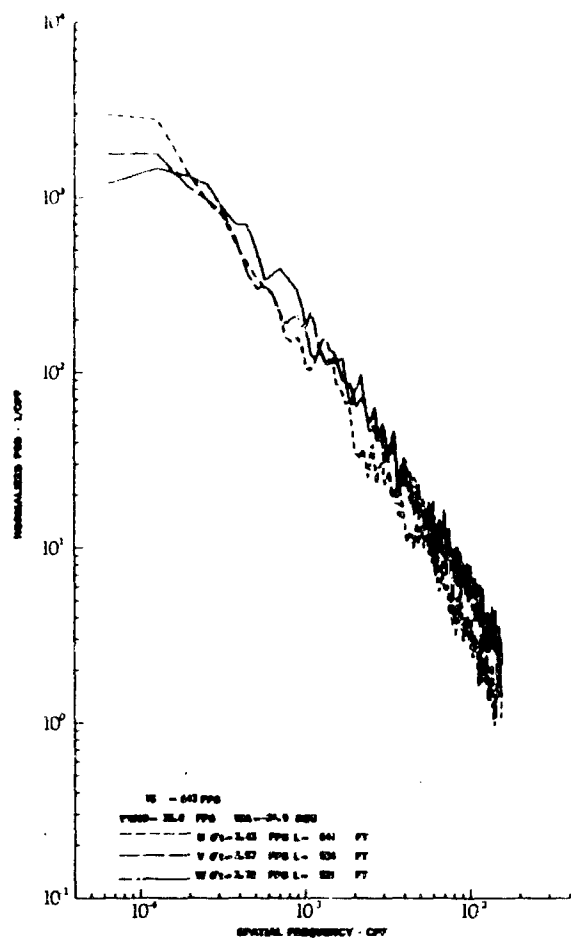
Turbulence Spectra Data For Test 43, Leg 5, Category 422224



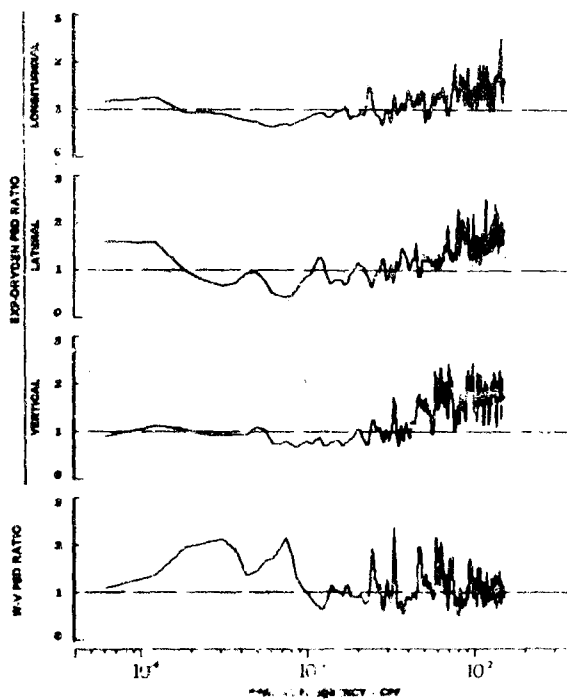
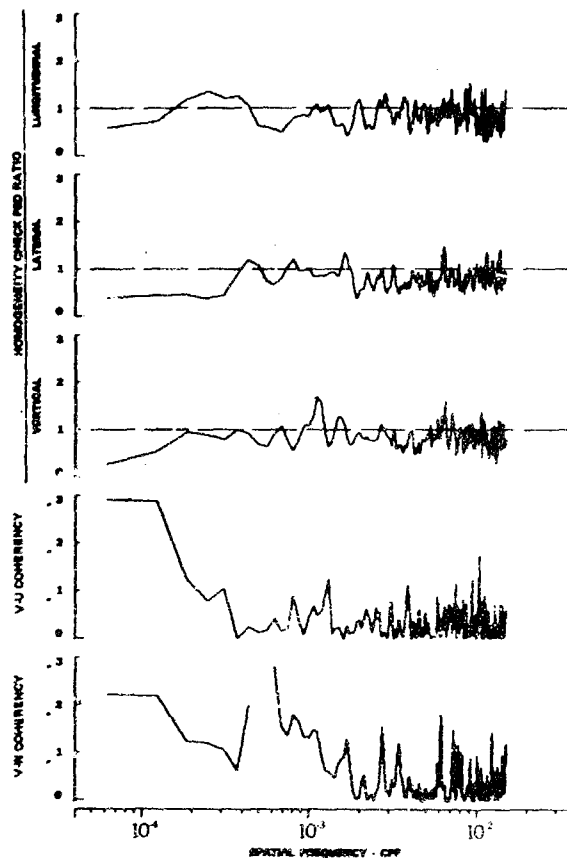
Turbulence Spectra Data For Test 43, Leg 7, Category 423224



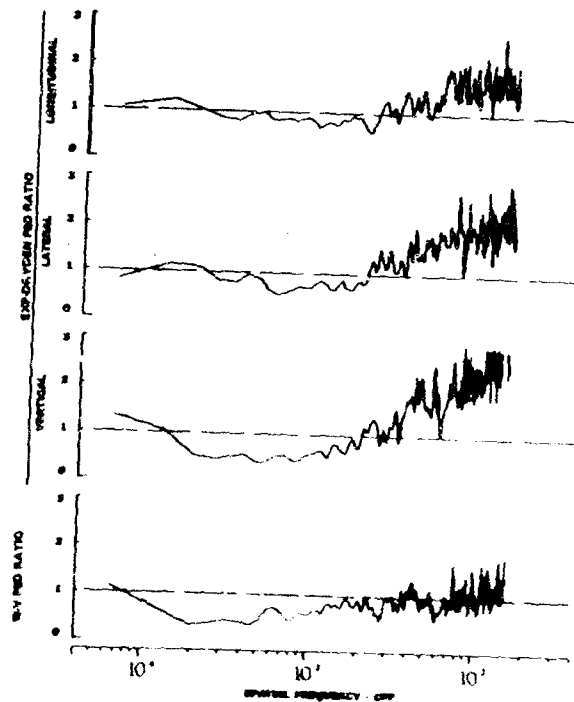
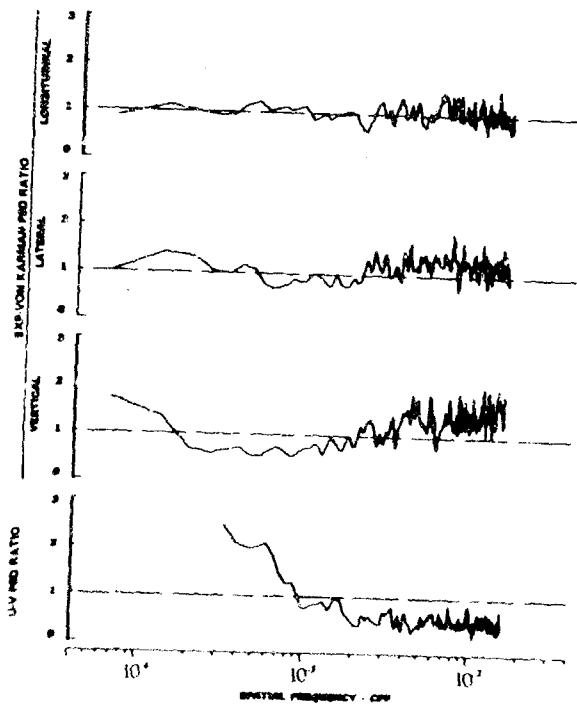
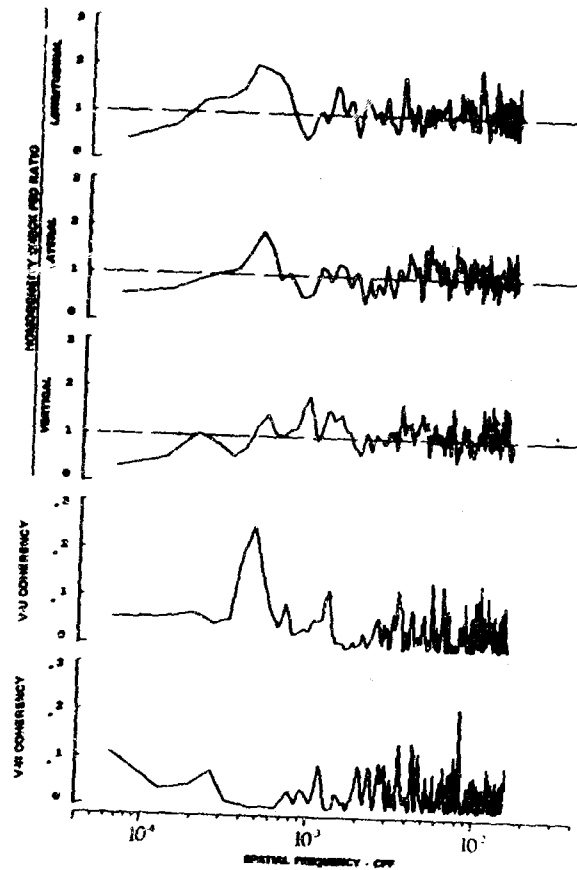
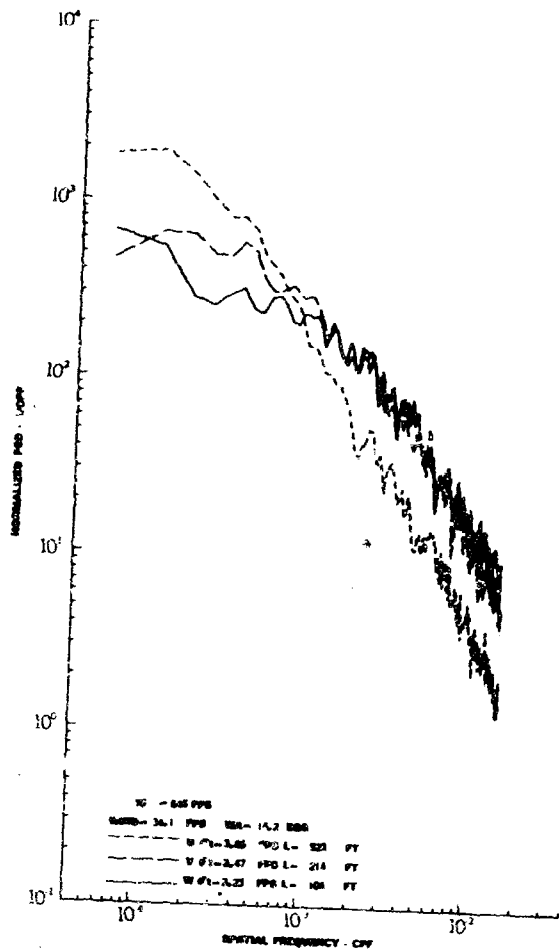
Turbulence Spectra Data For Test 44, Log 4, Category 424324



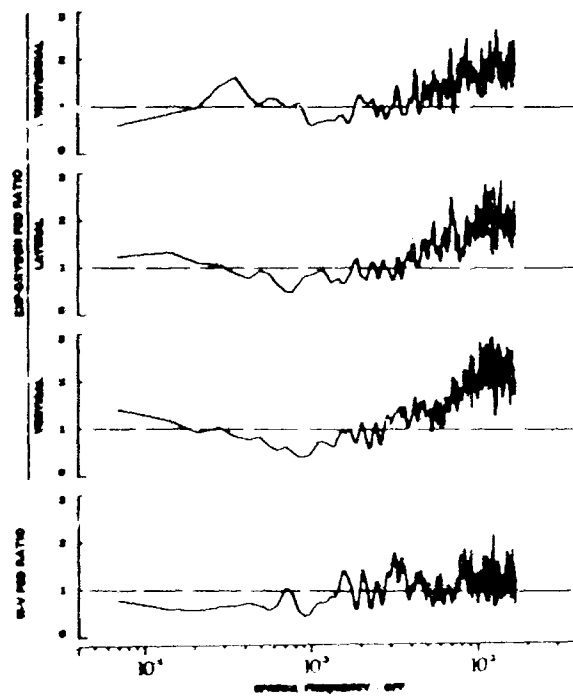
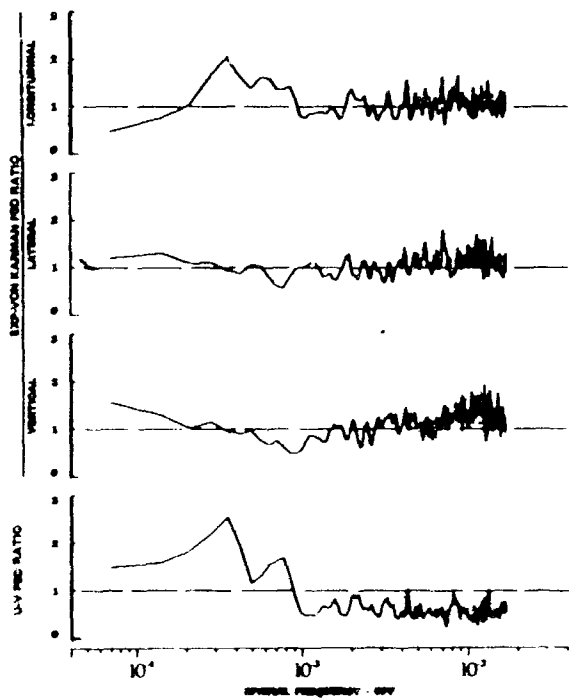
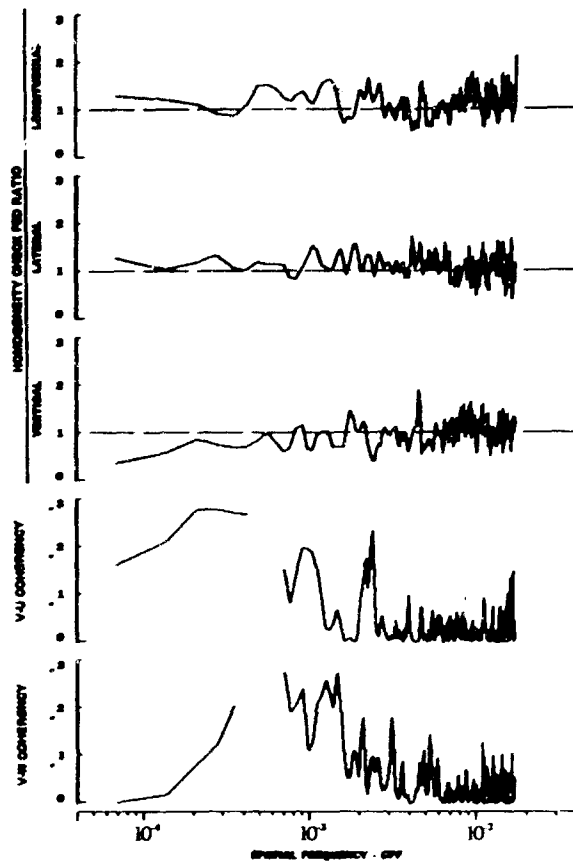
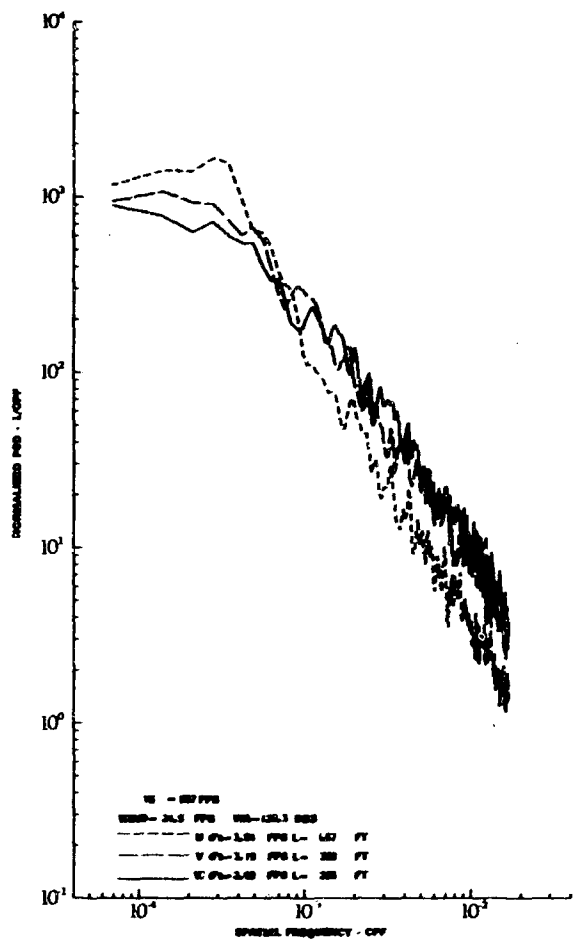
Turbulence Spectra Data For Test 44, Leg 6, Category 424324



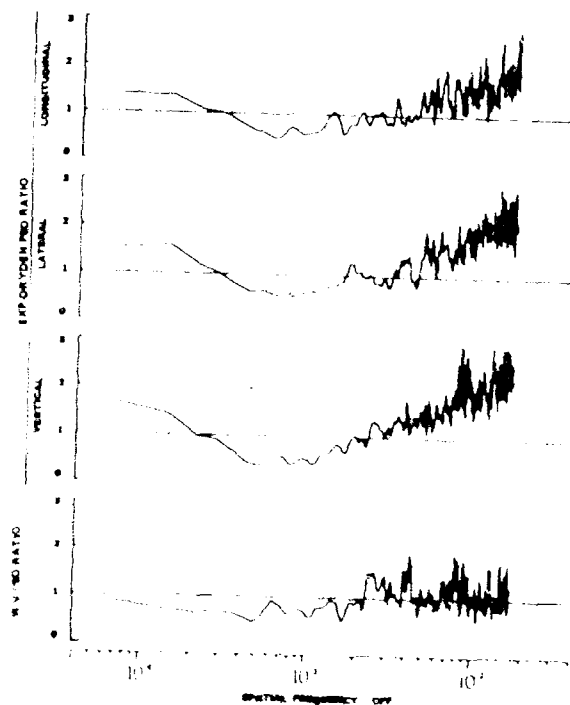
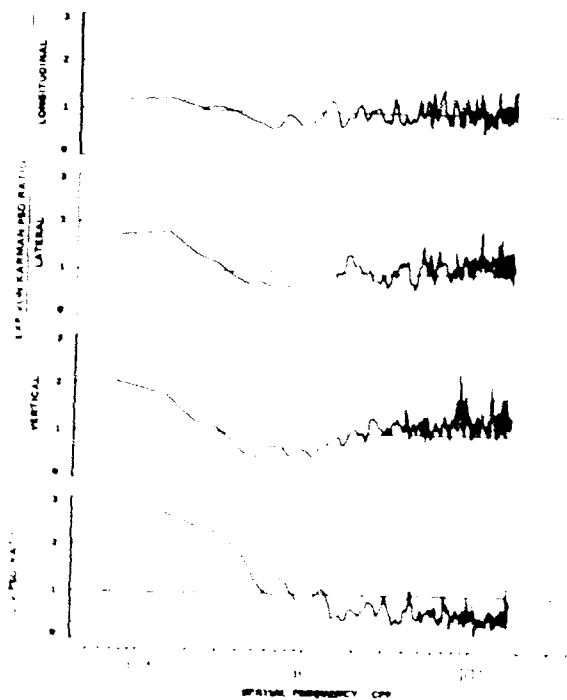
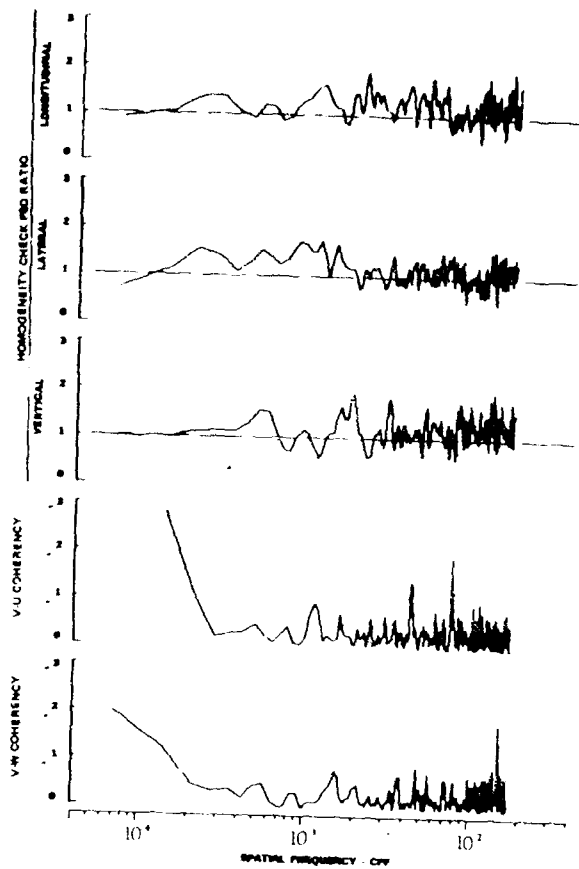
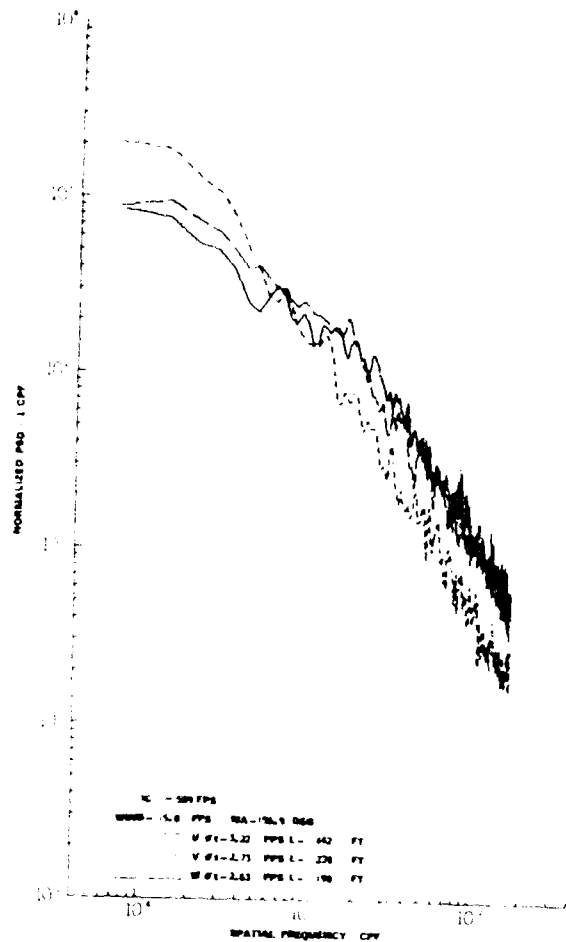




Turbulence Spectra Data For Test 46, Leg 2, Category 411234

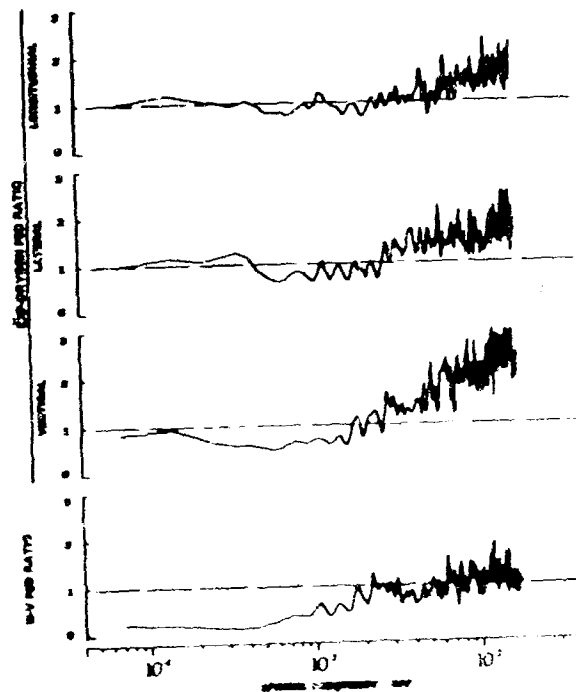
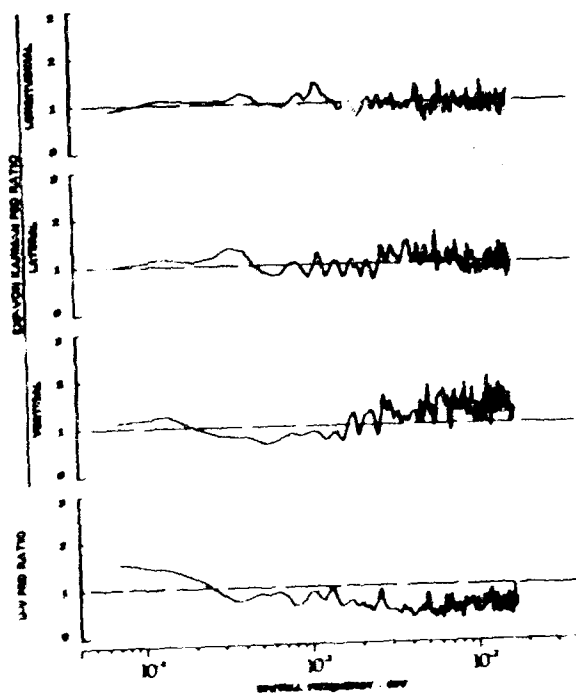
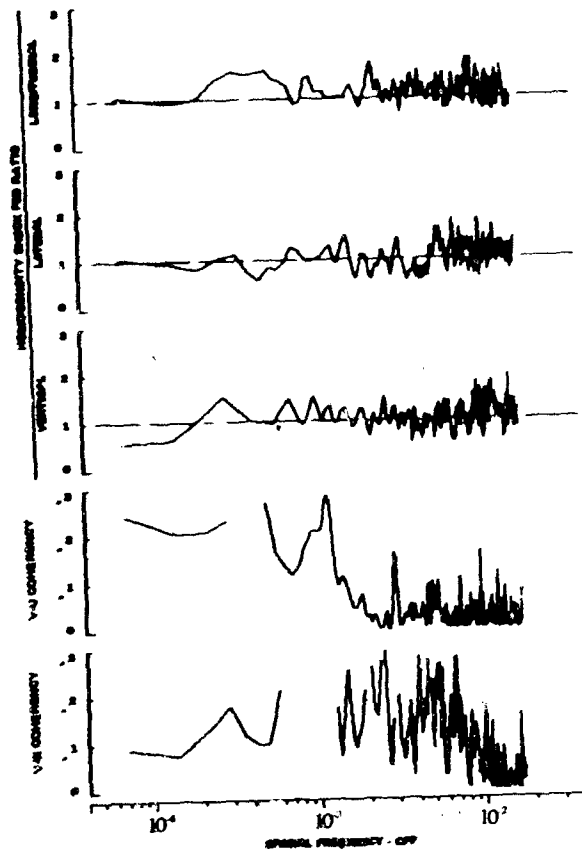
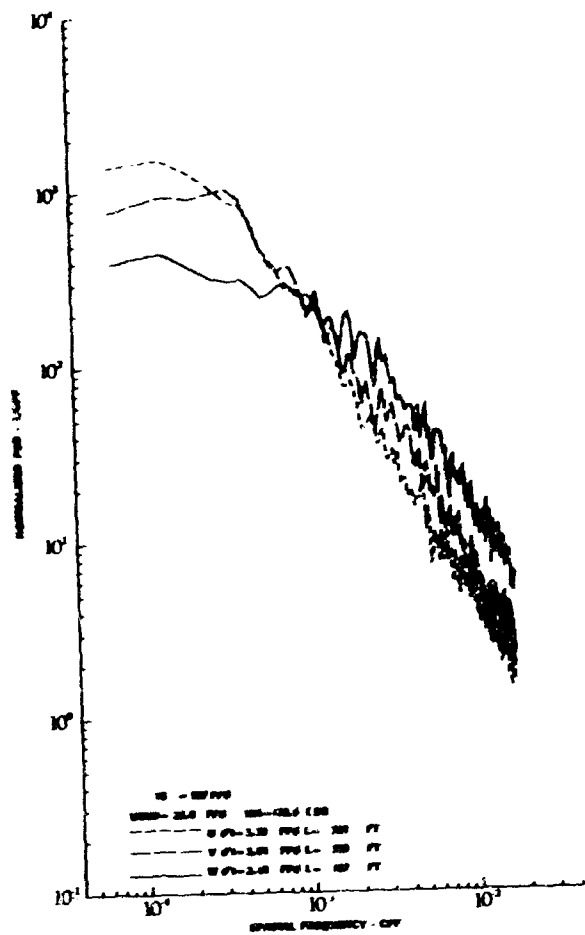


Turbulence Spectra Data For Test 46, Log 4, Category 413234

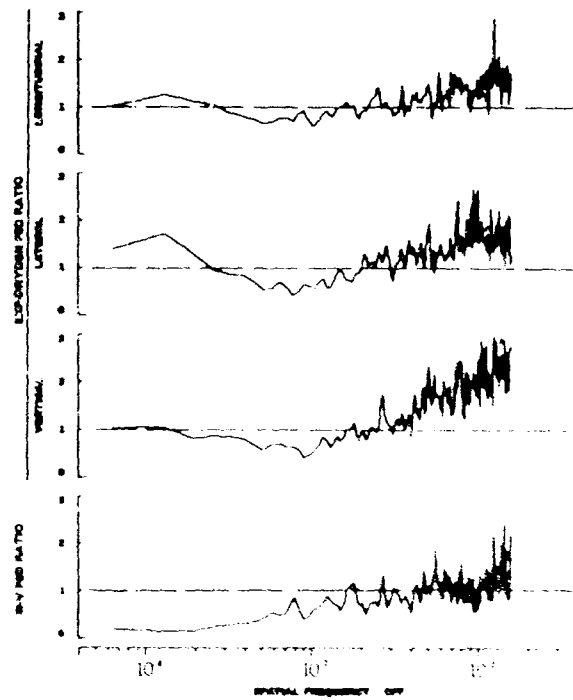
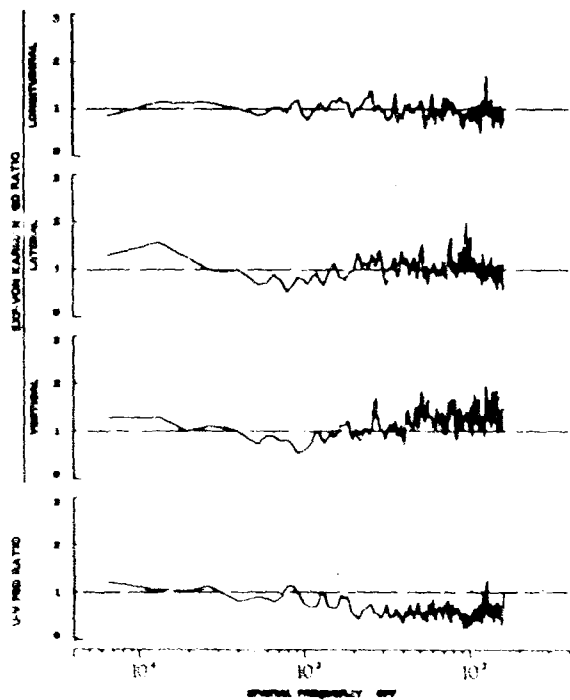
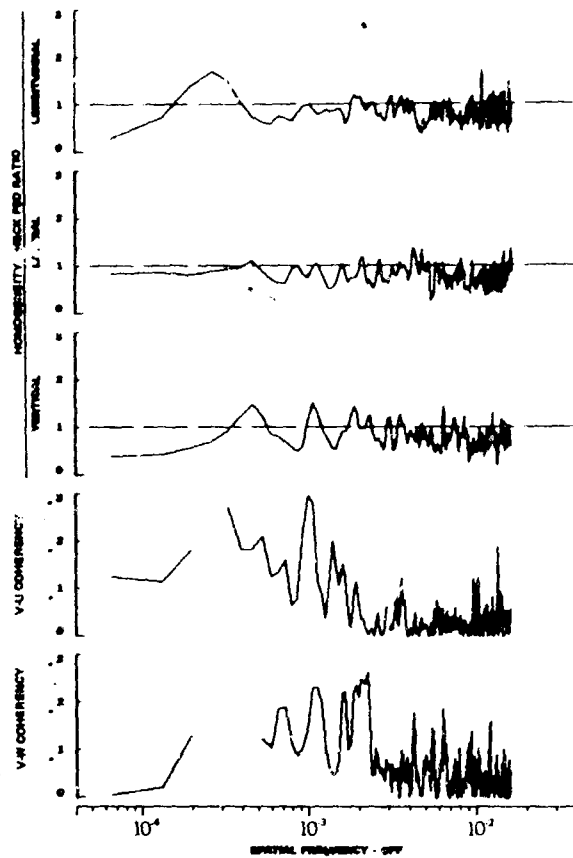
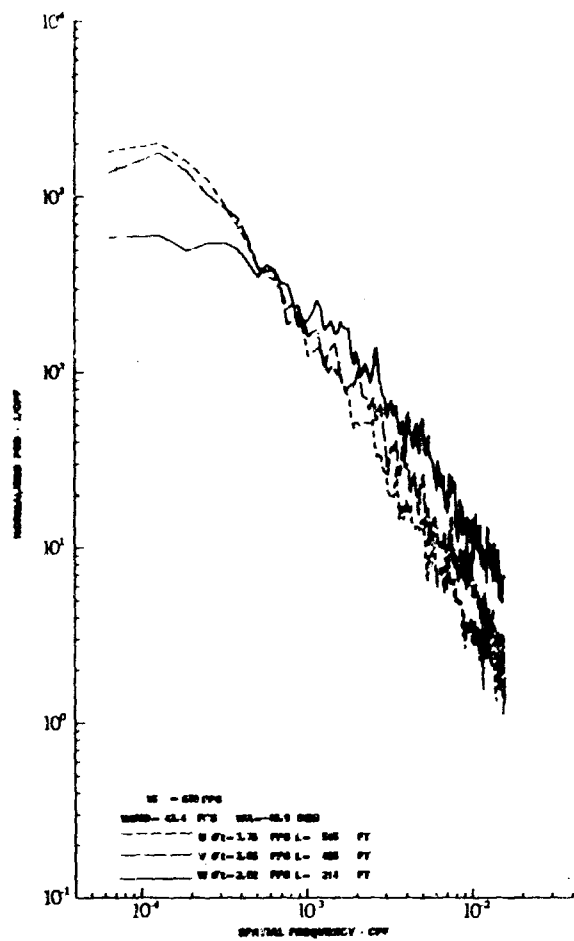


Turbulence Spectra Data for Test 46, Leg 6, Category 412234

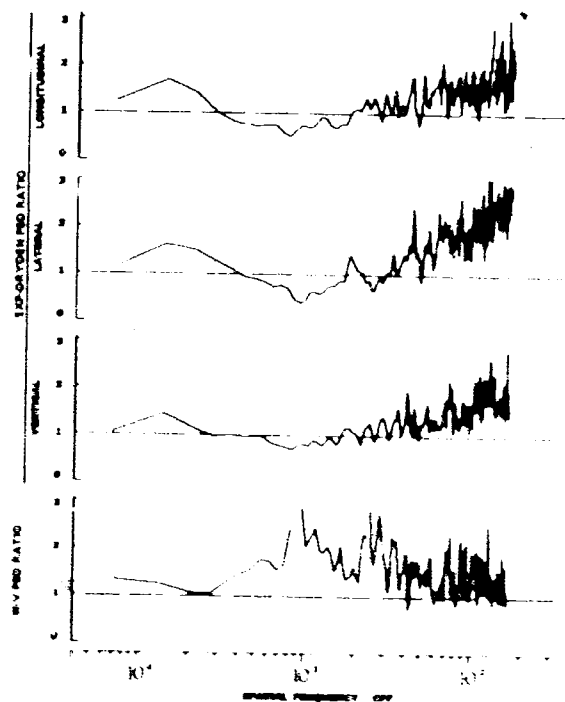
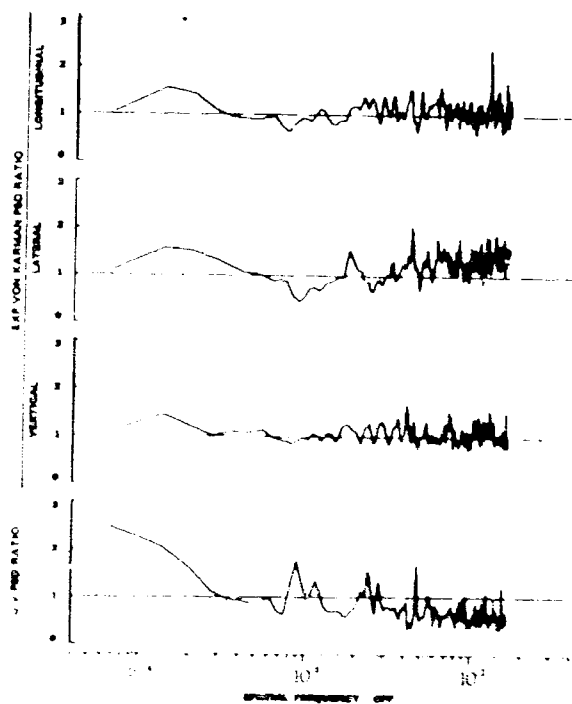
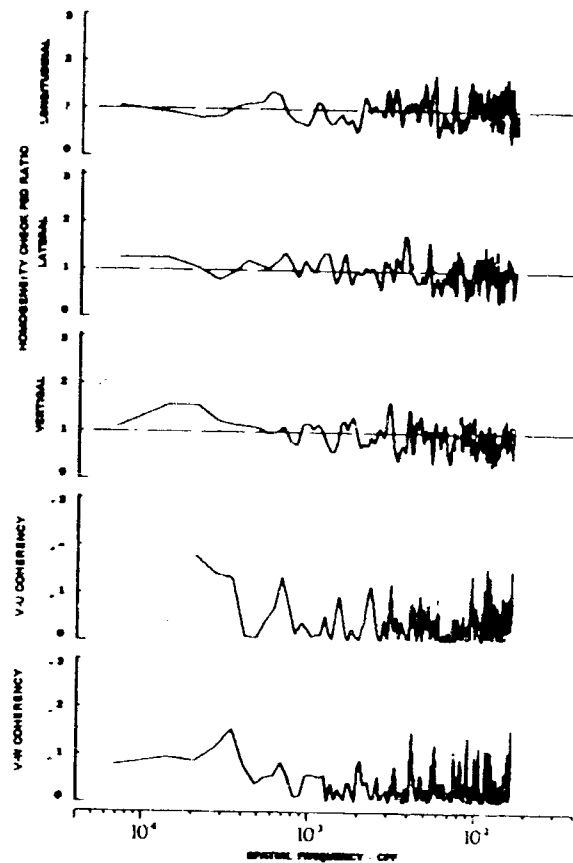




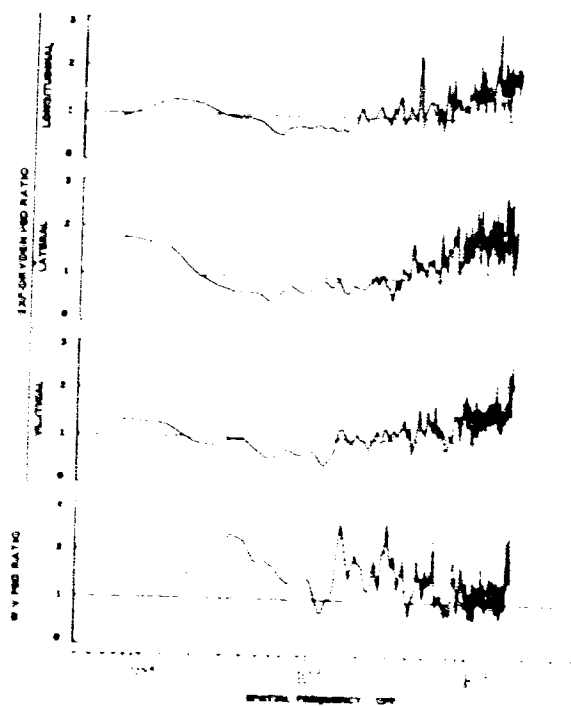
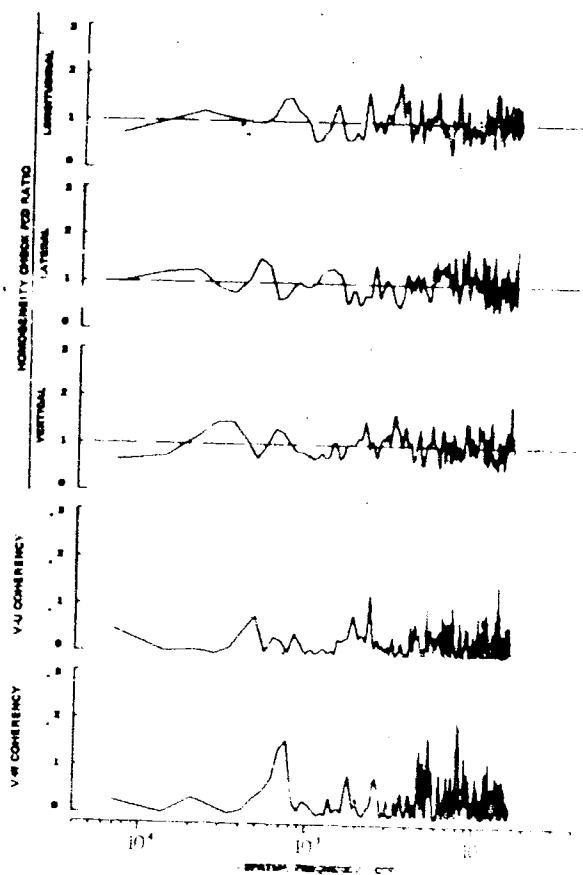
Turbulence Spectra Data For Test 47, Log 3, Category 413334



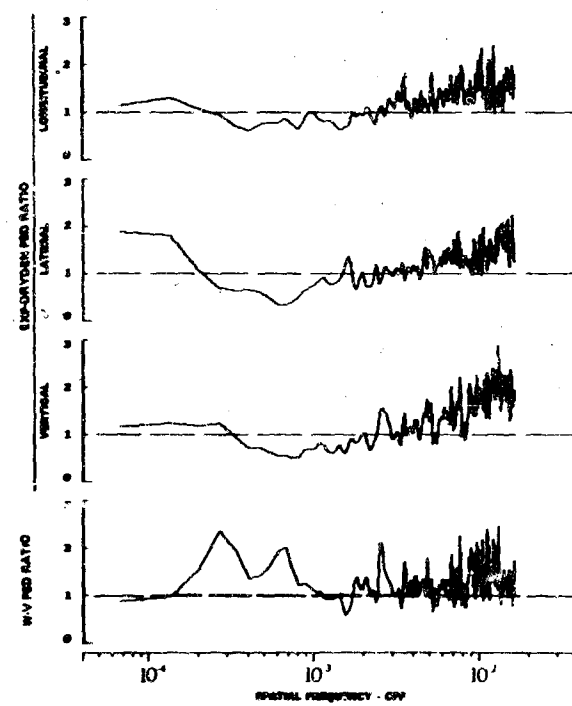
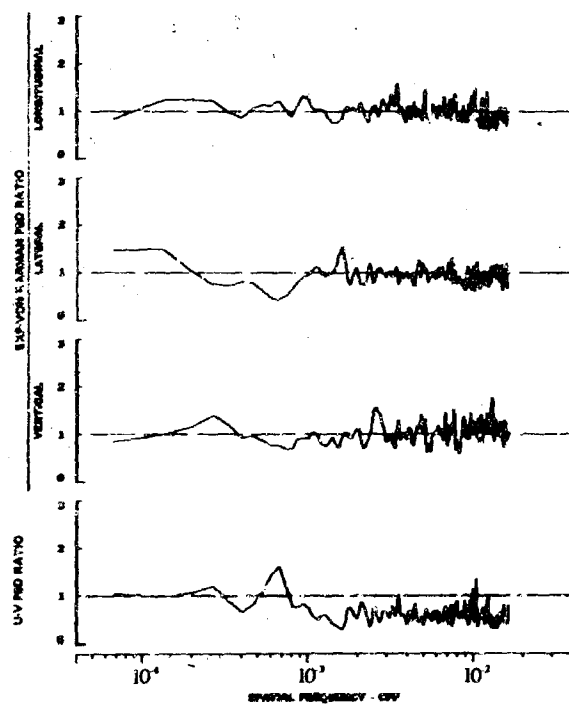
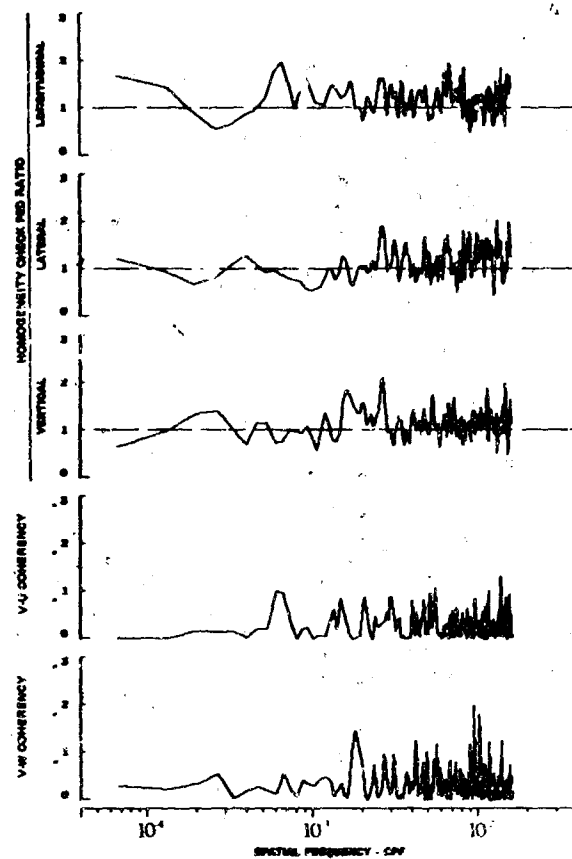
Turbulence Spectra Data For Test A7, Leg 7, Category 414714



Turbulence Spectra Data For Test 49, Log 7. Category 42!234

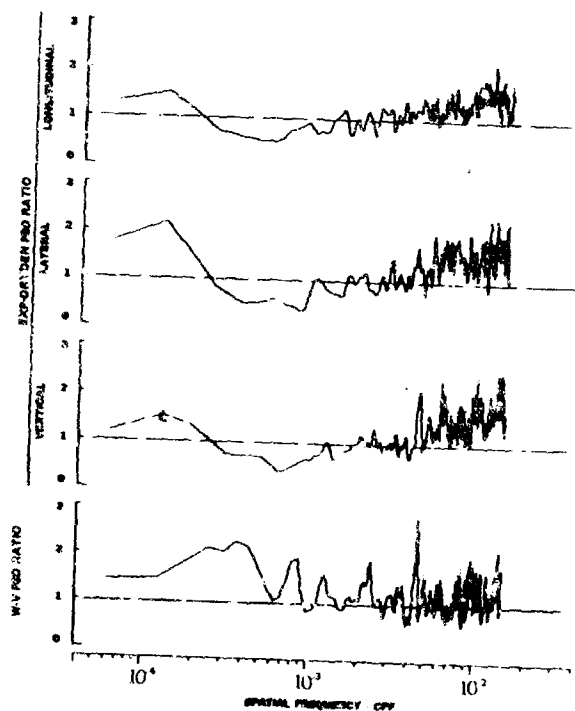
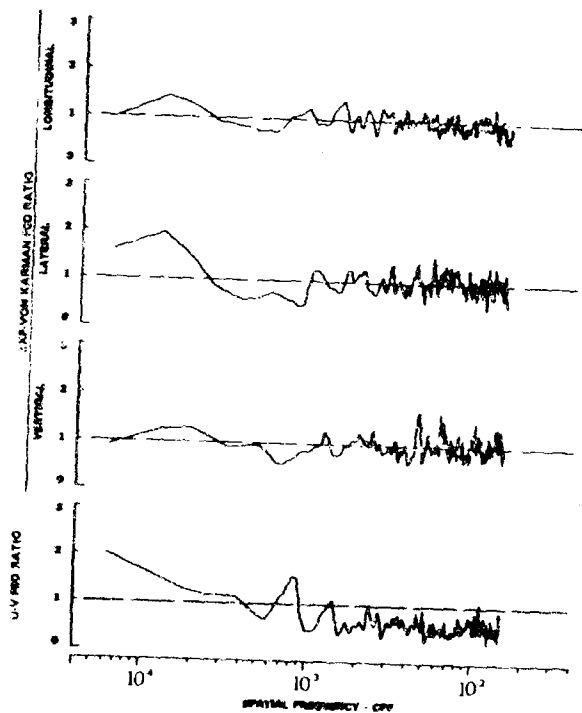
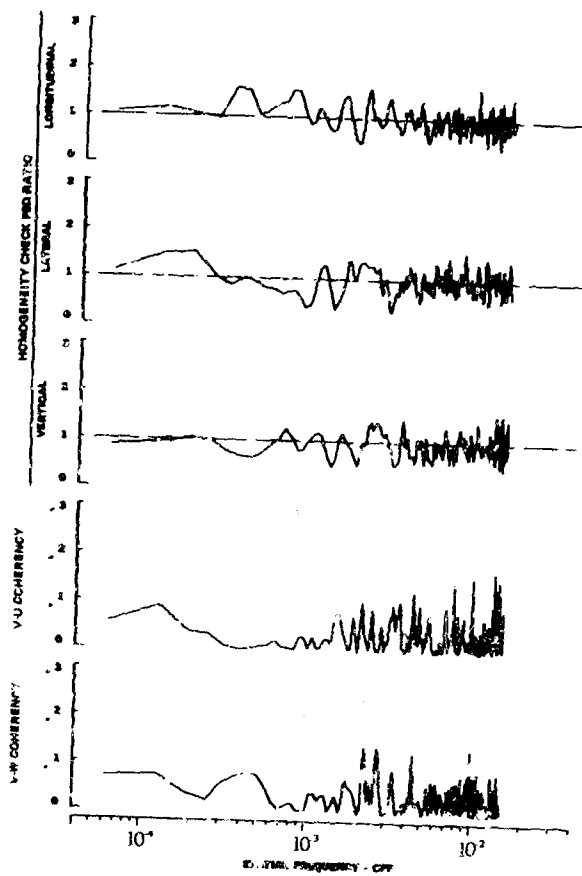
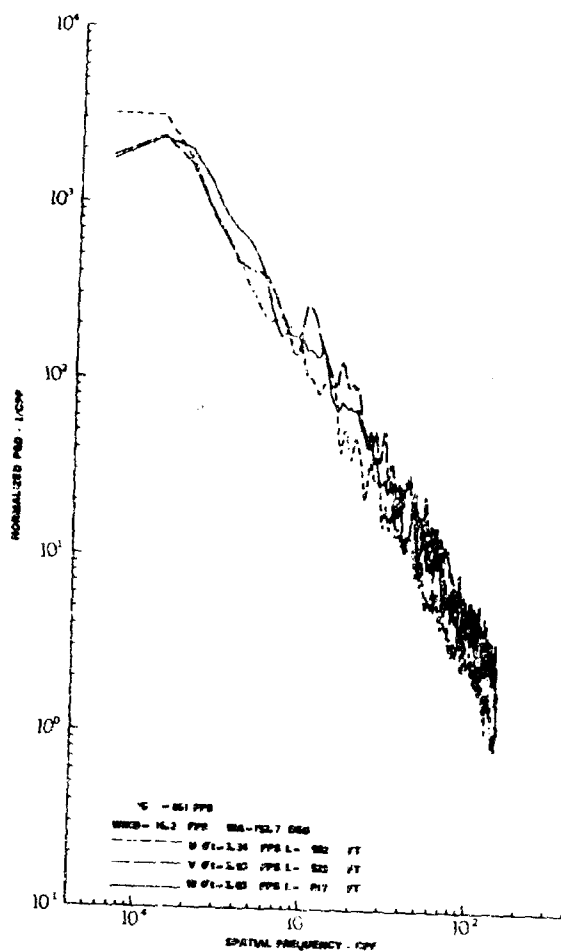




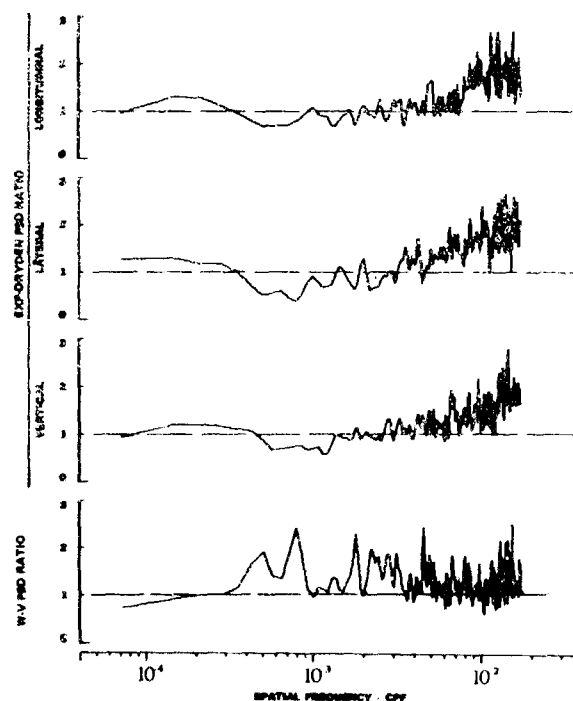
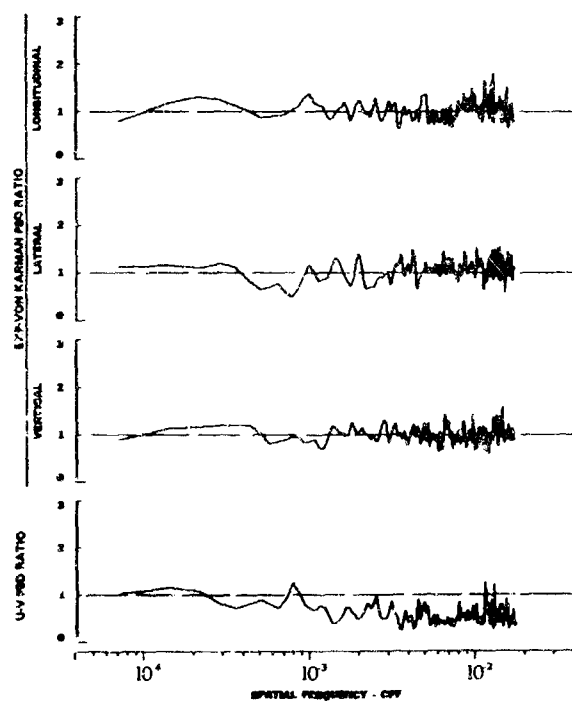
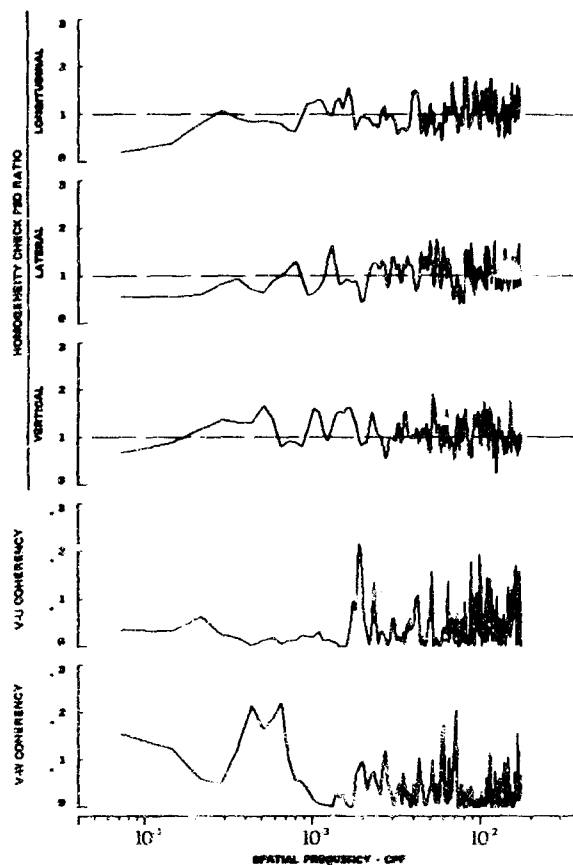
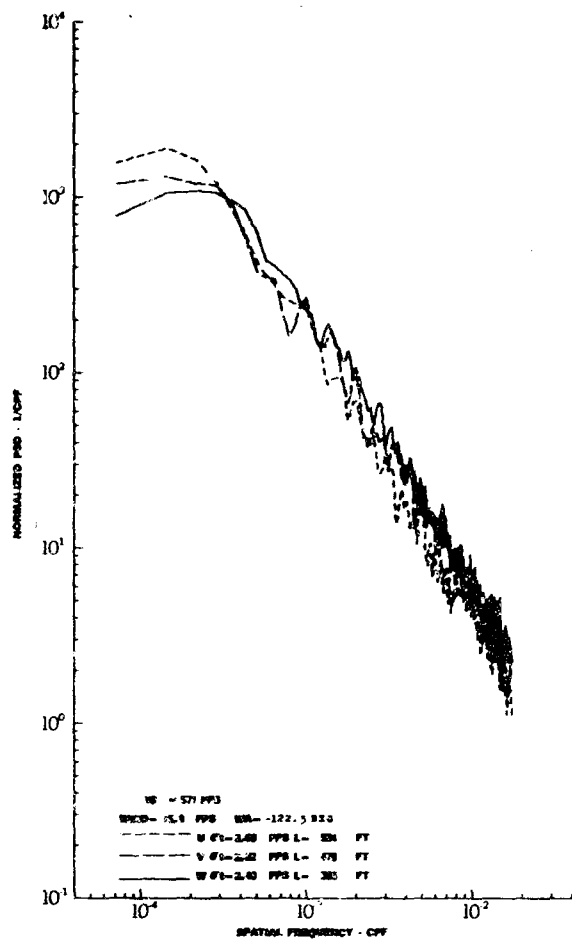


**Turbulence Spectra Data For Test 50, Leg 4, Category 424334**

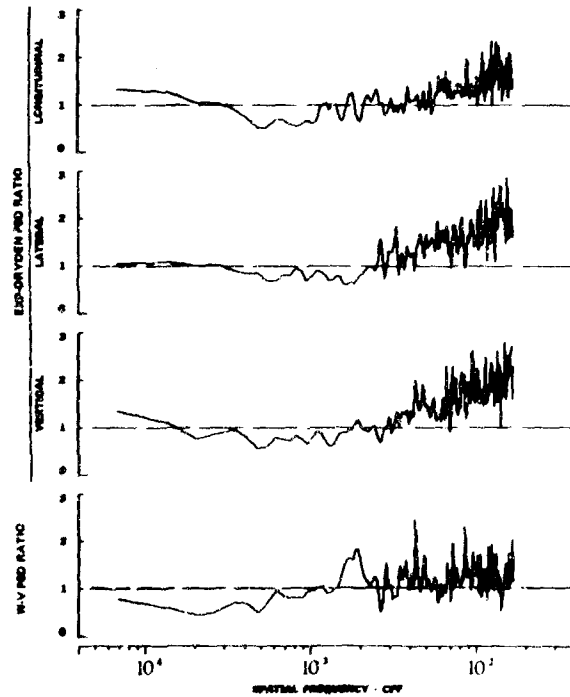
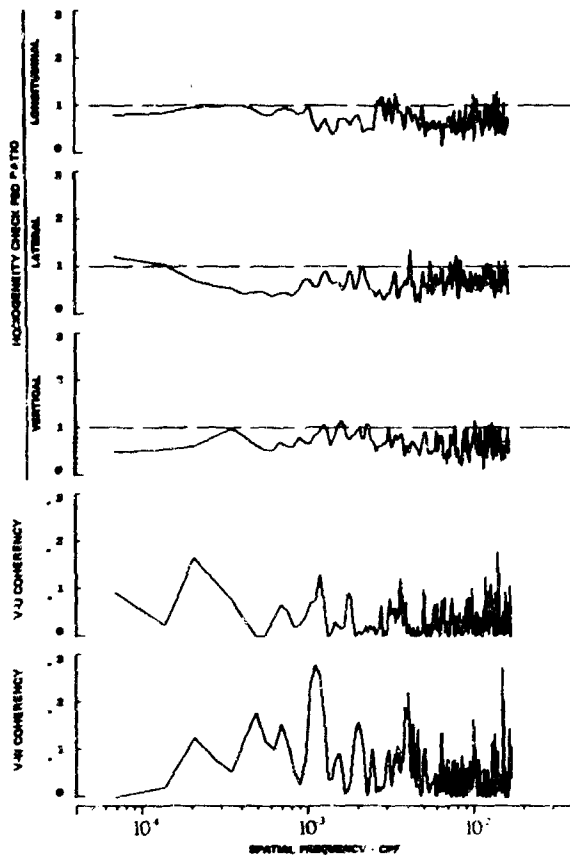


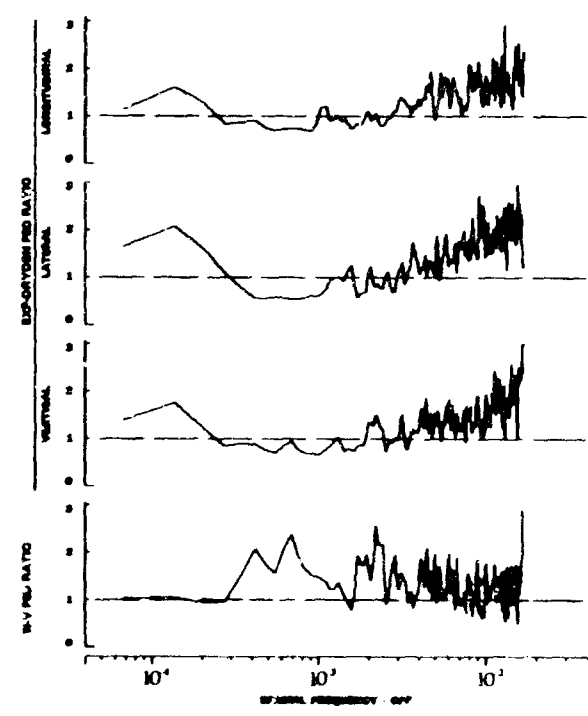
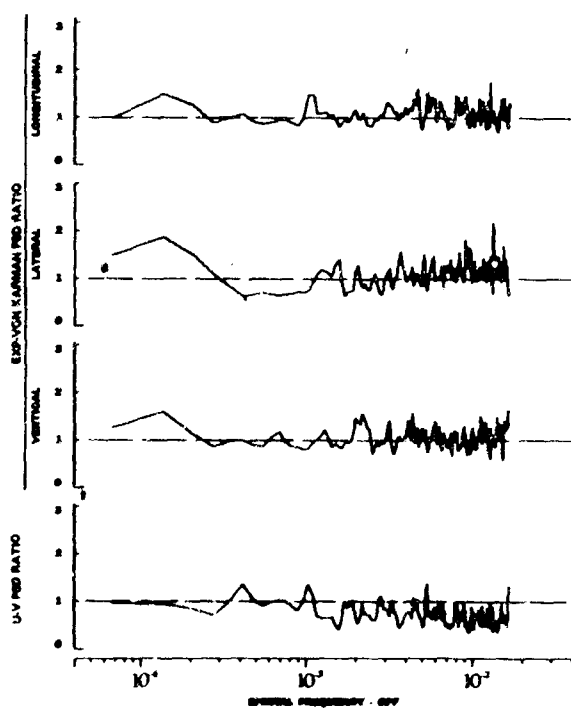
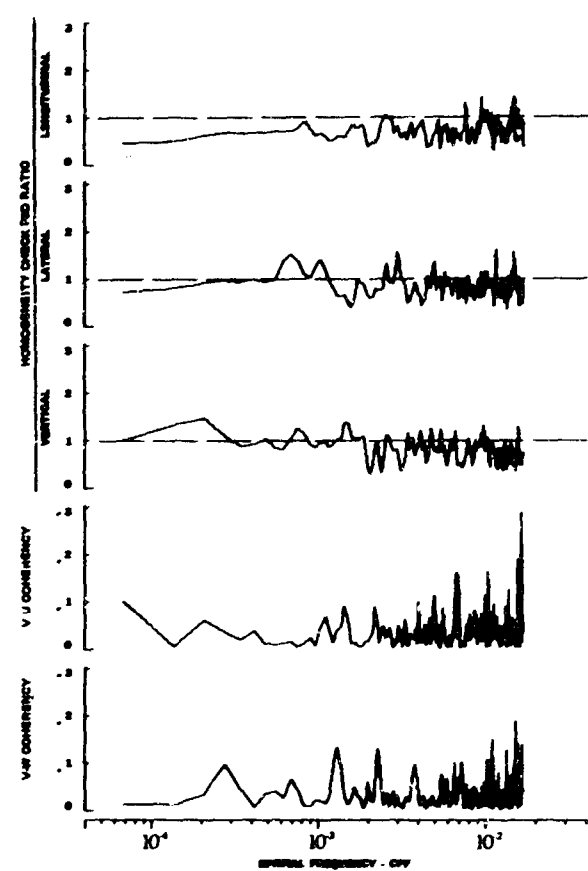
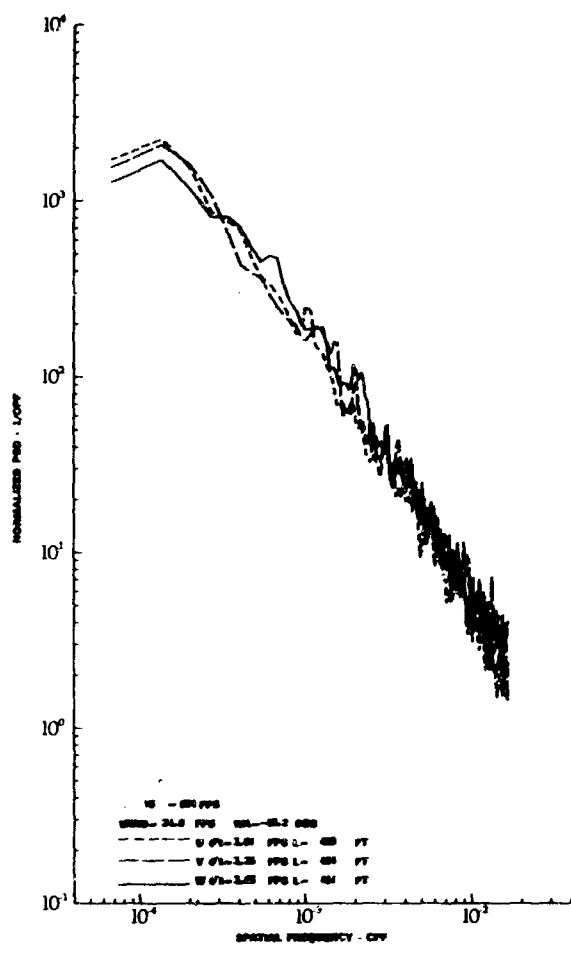


Turbulence Spectra Data For Test 50, Log 8, Category 424334

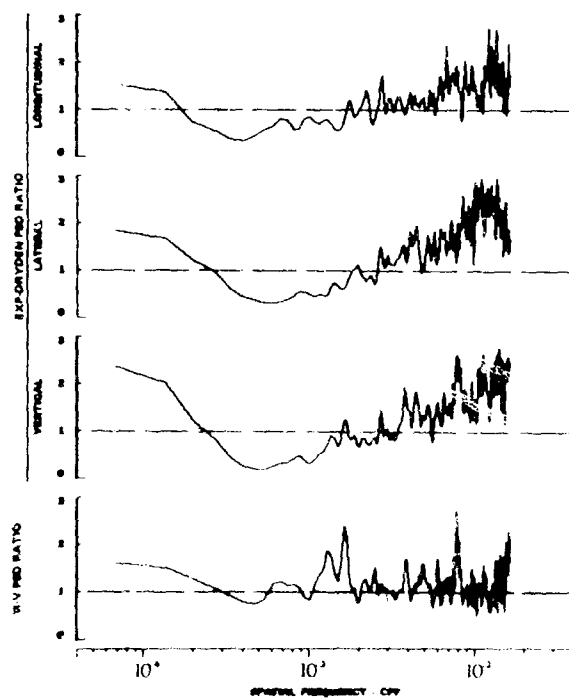
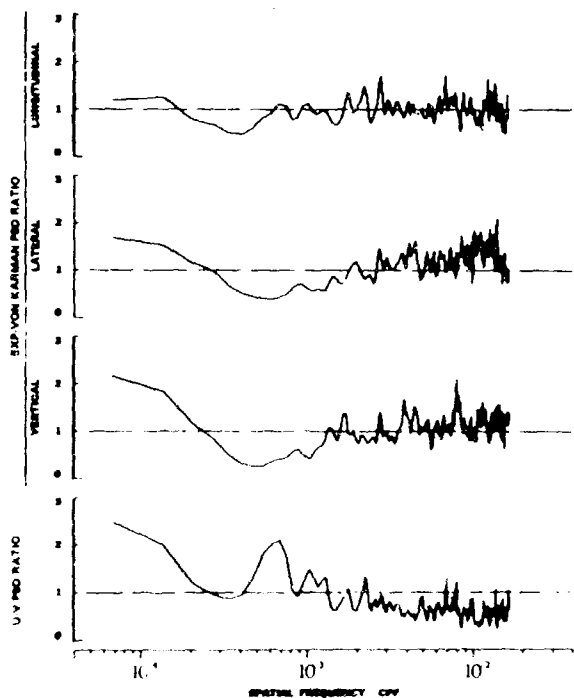
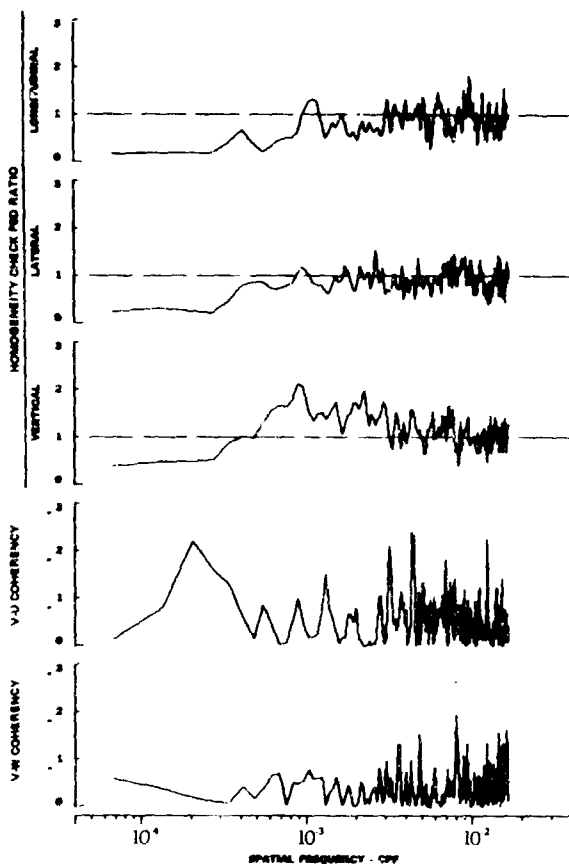
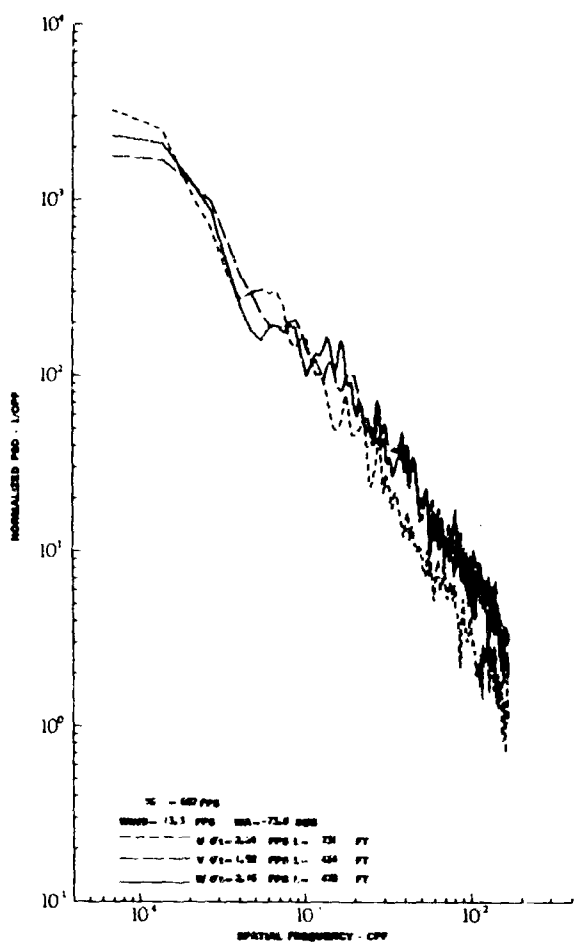


Turbulence Spectra Data For Test 51, Leg 3, Category 323231

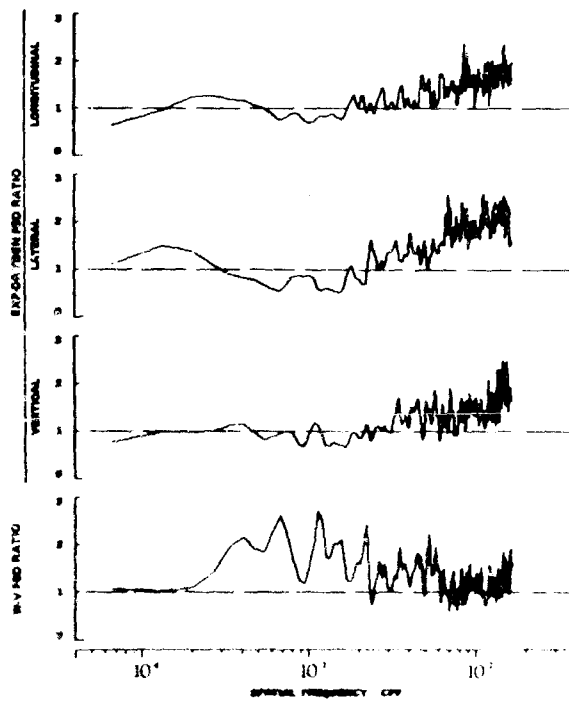
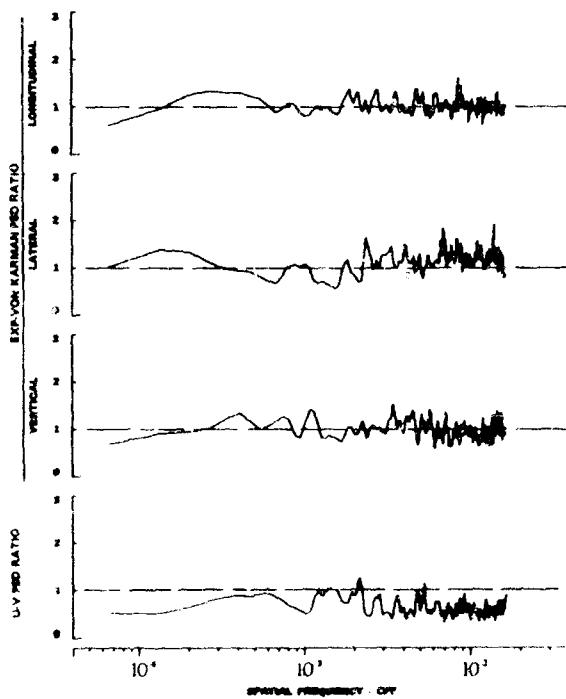
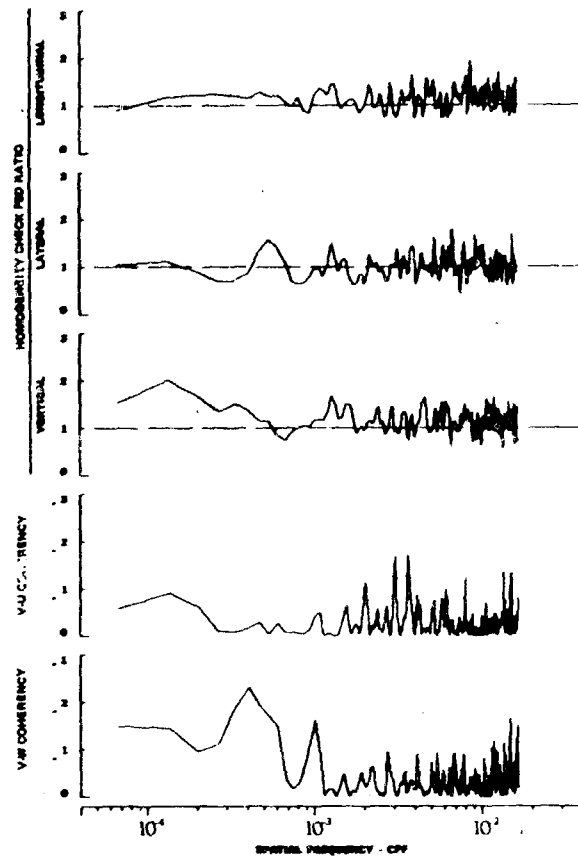
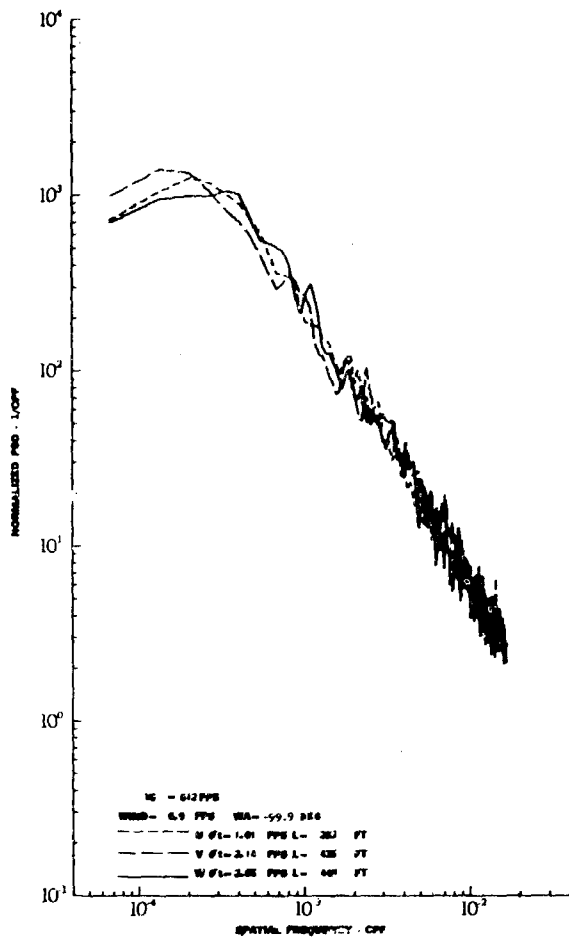




Turbulence Spectra Data For Test 57, Leg 1, Category 224331

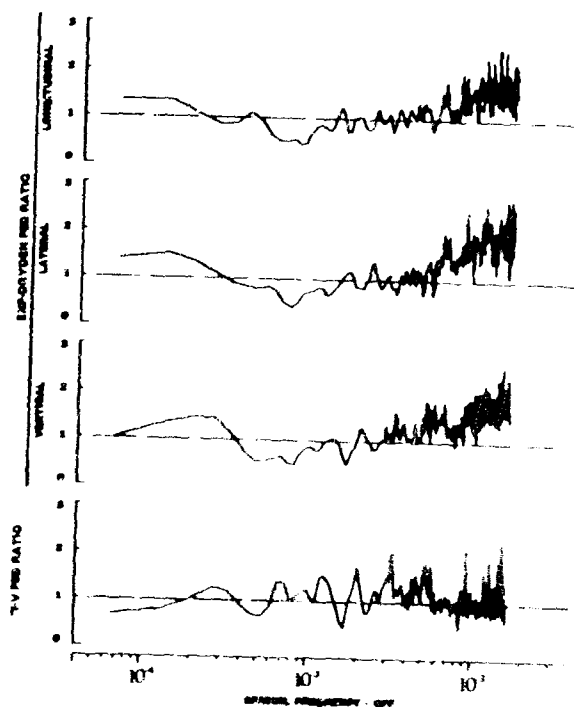
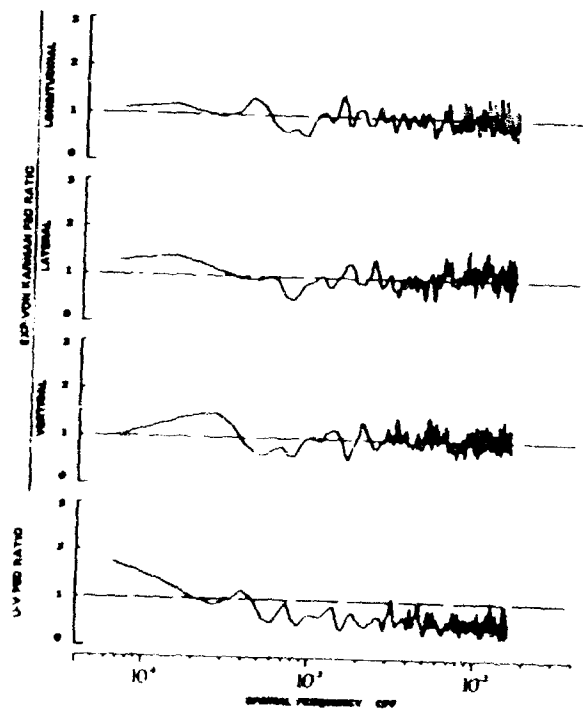
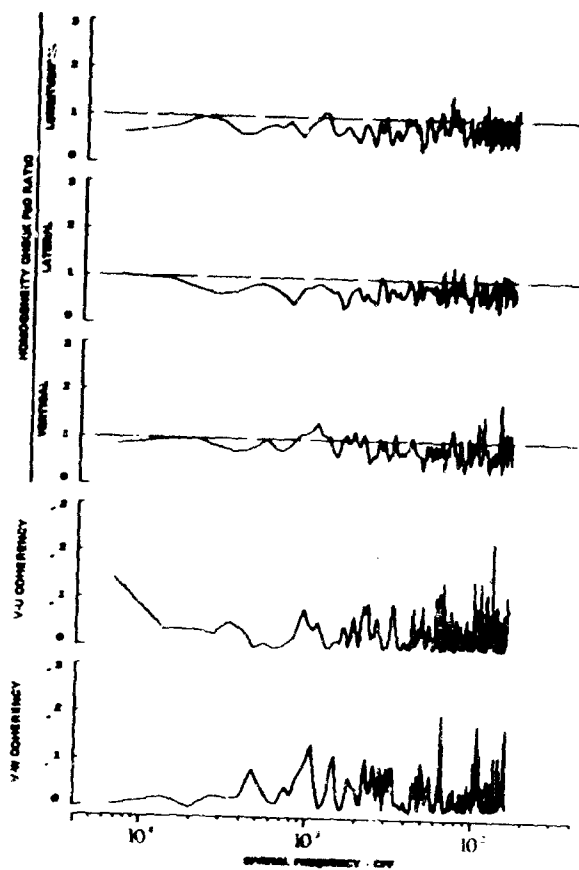
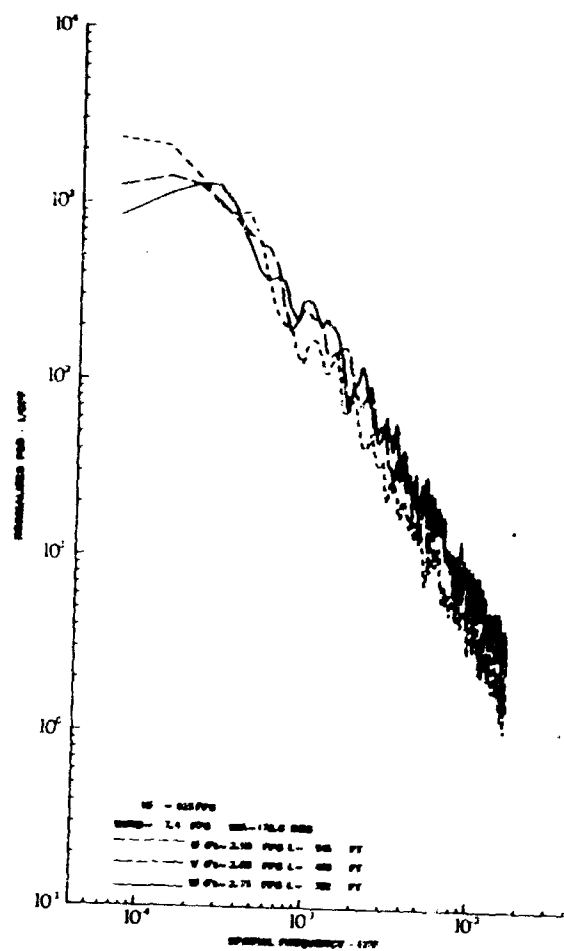


Turbulence Spectra Data For Test 59, Leg 1, Category 211231

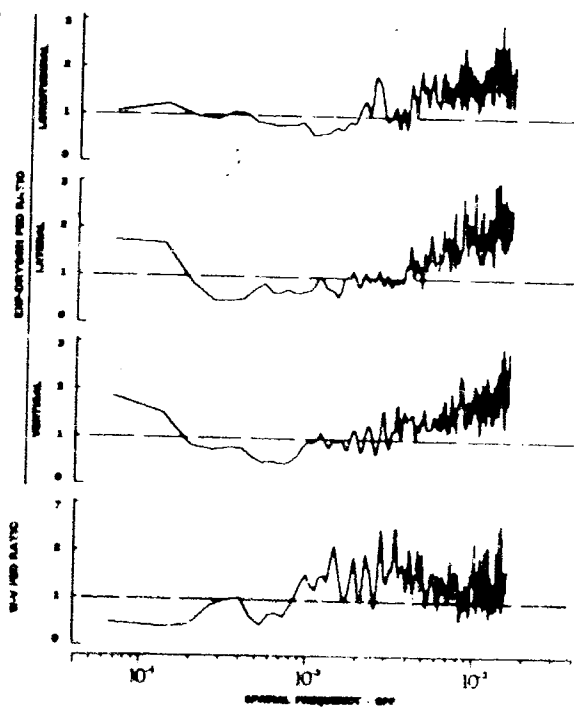
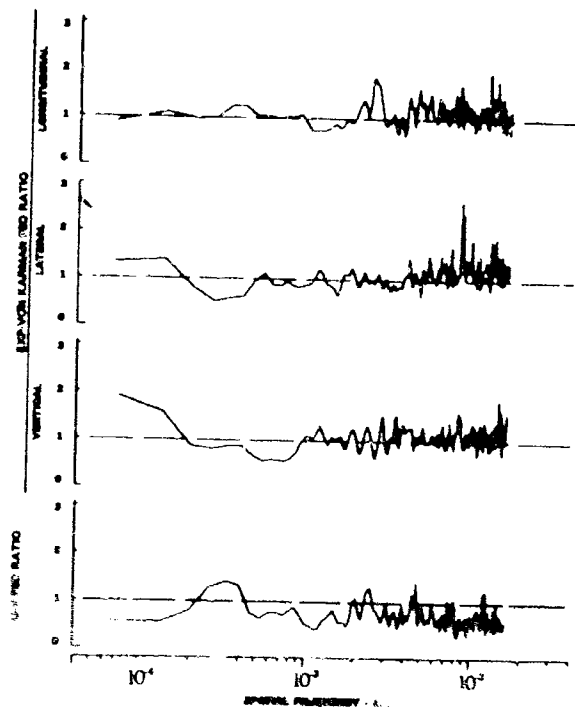
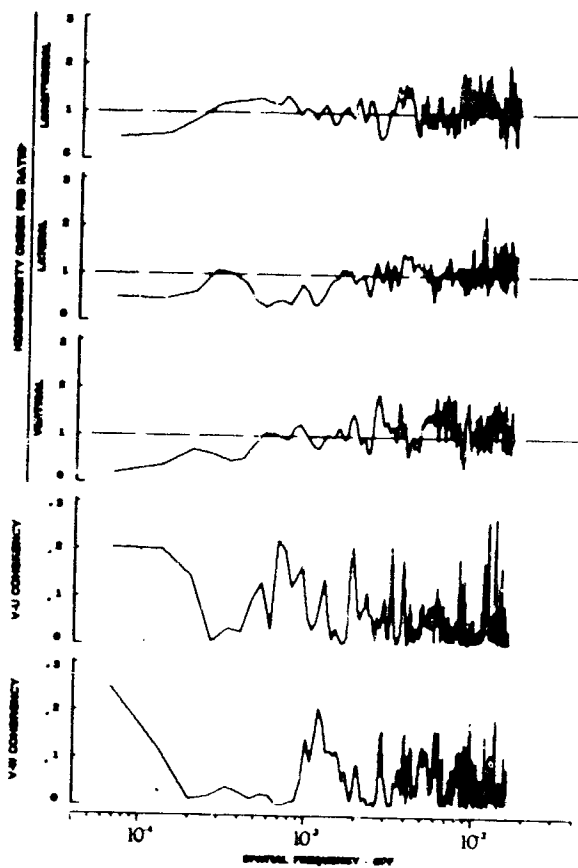
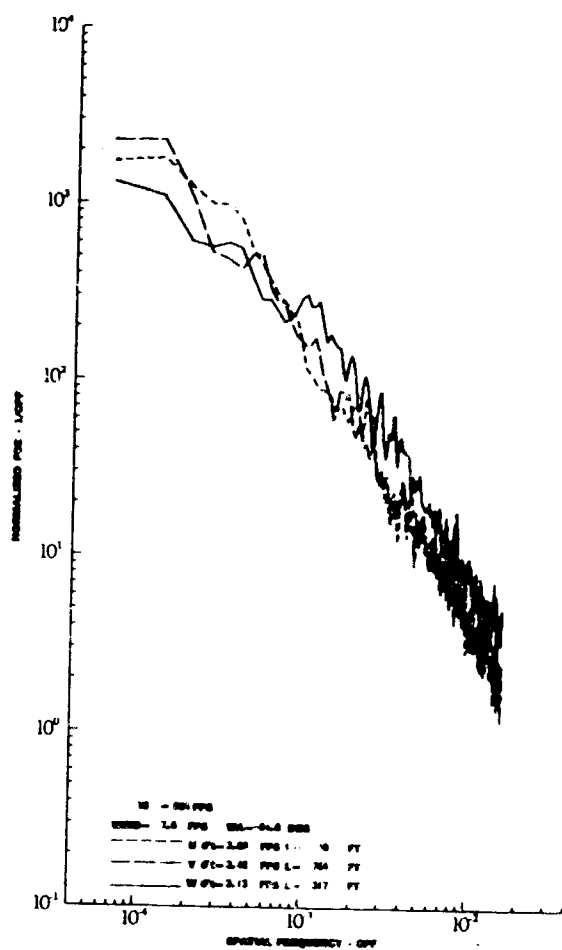


Turbulence Spectra Data For Test 62, Leg 2, Category 322331





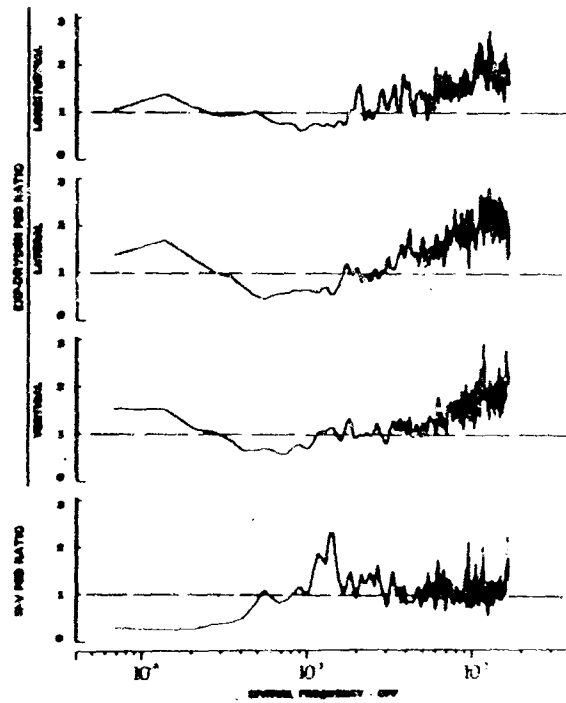
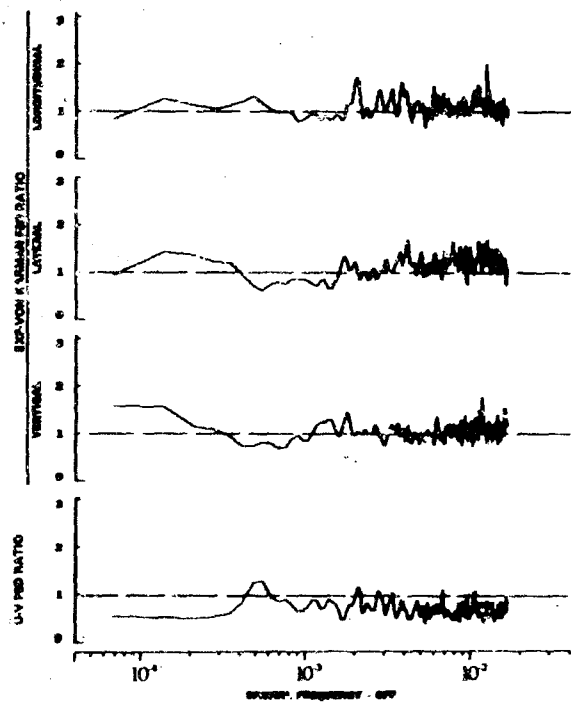
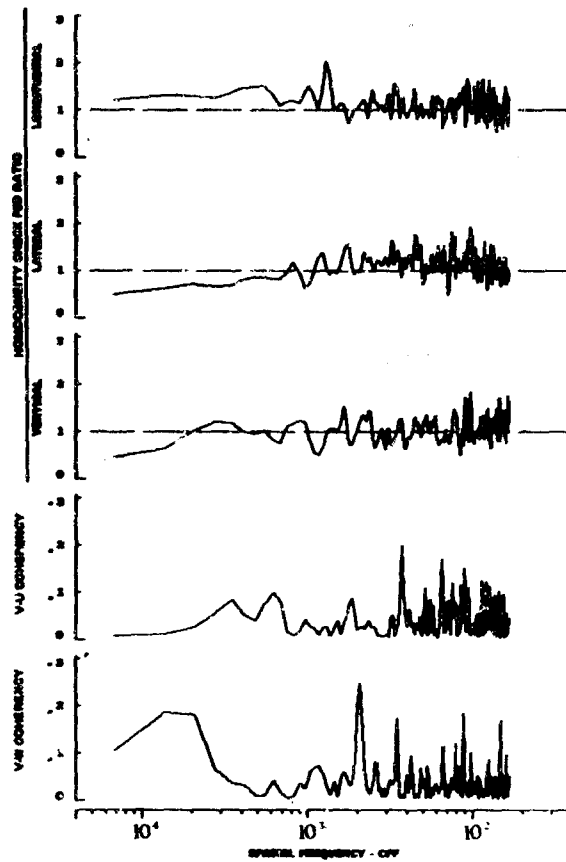
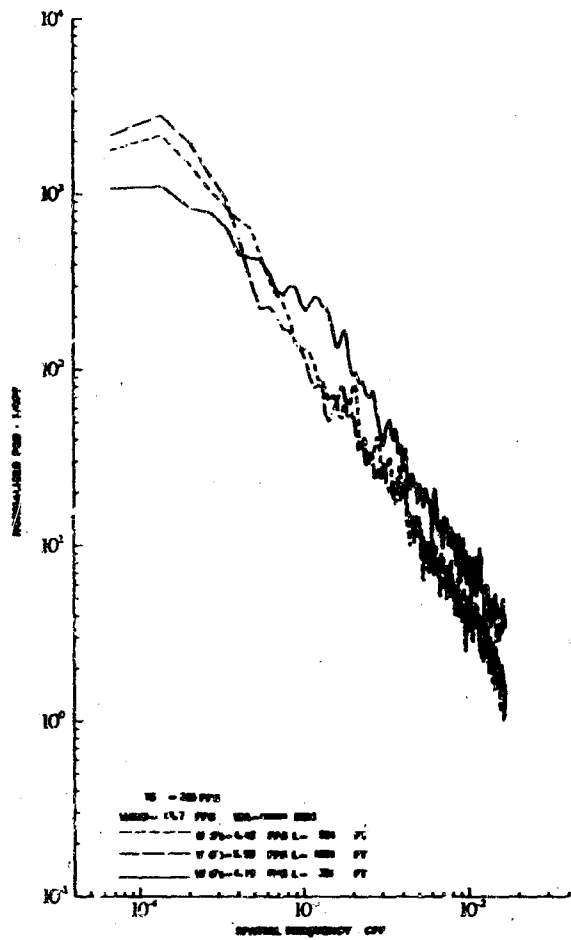
Turbulence Spectra Data For Test 62, Log 6, Category 123331



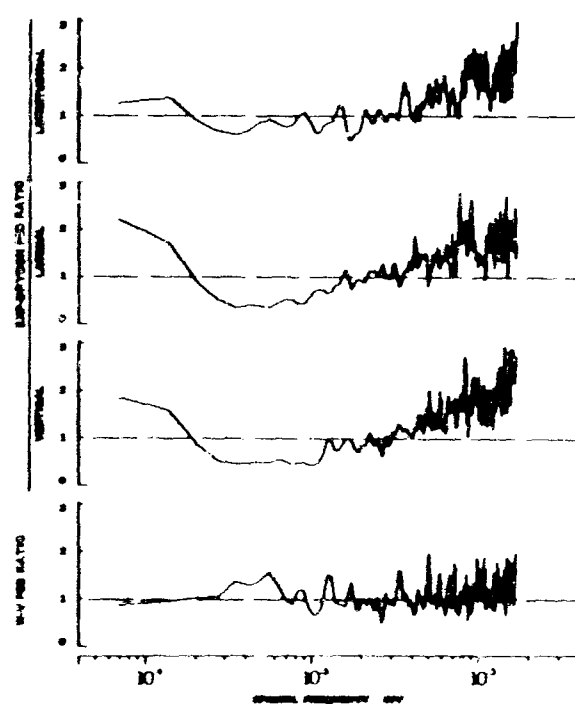
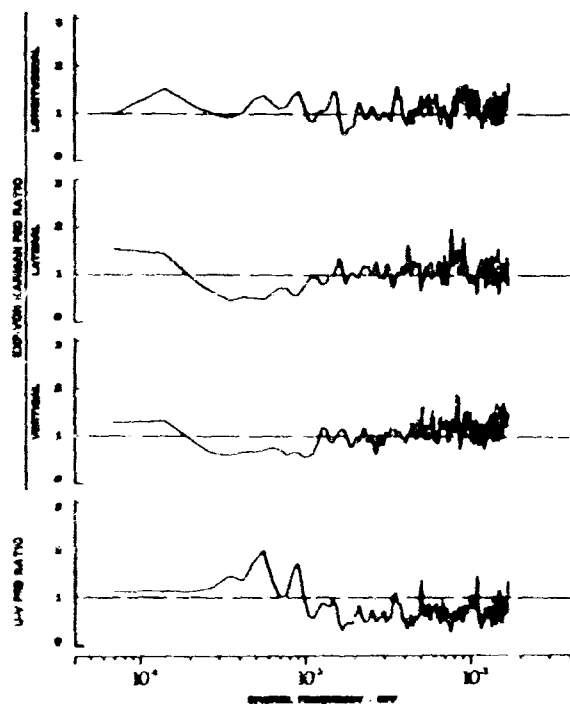
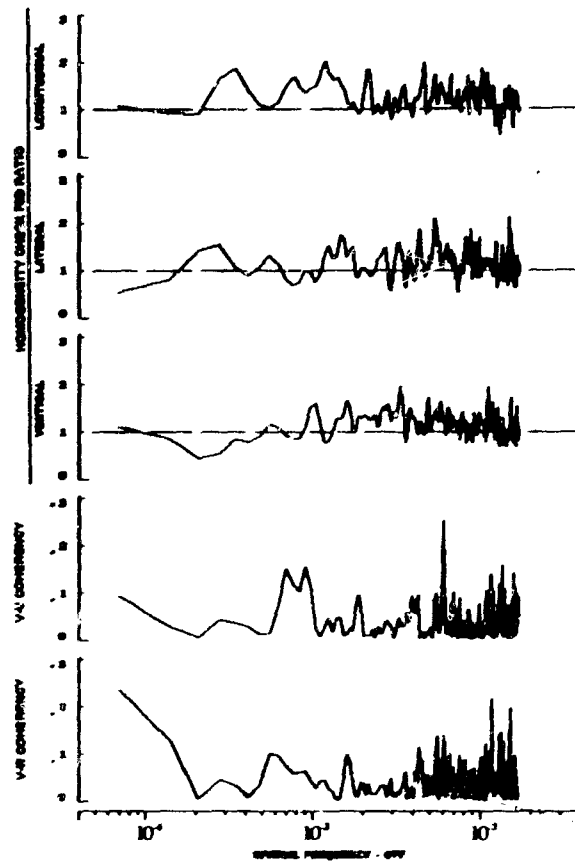
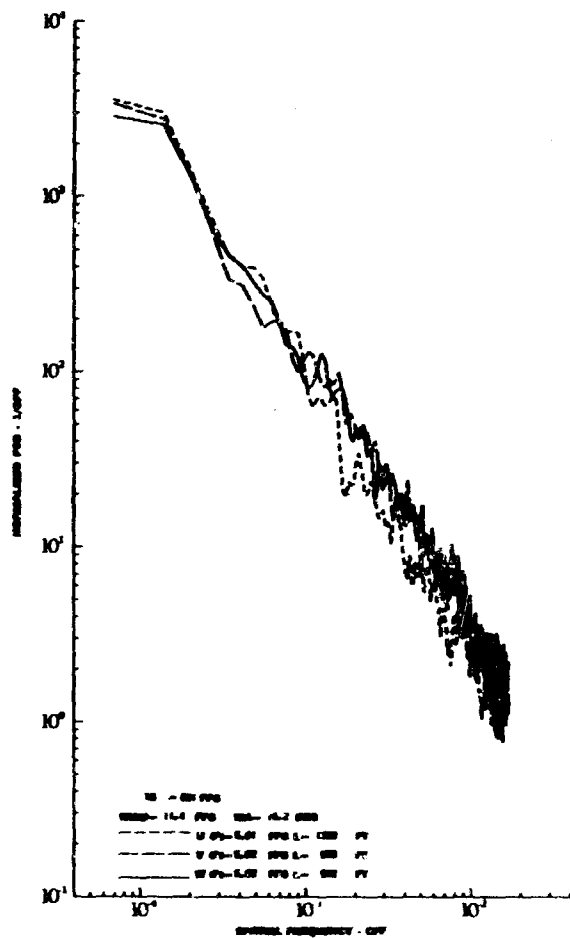
Turbulence Spectra Data for Test 64 - 6, Category 111231



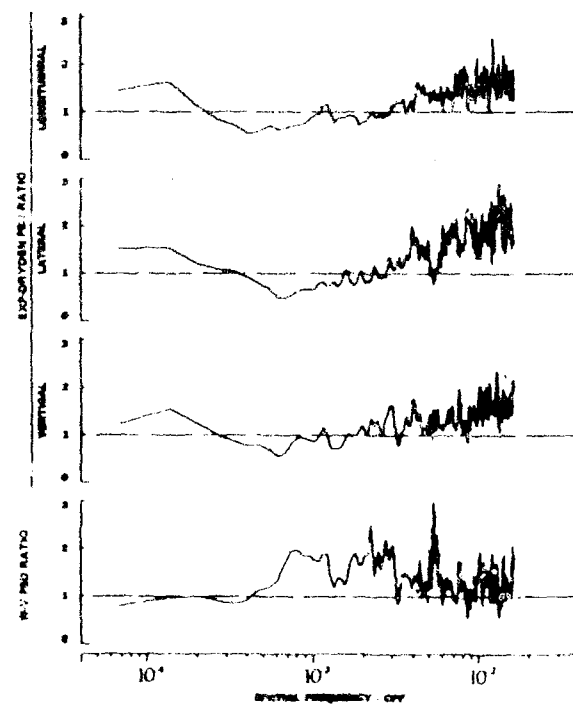
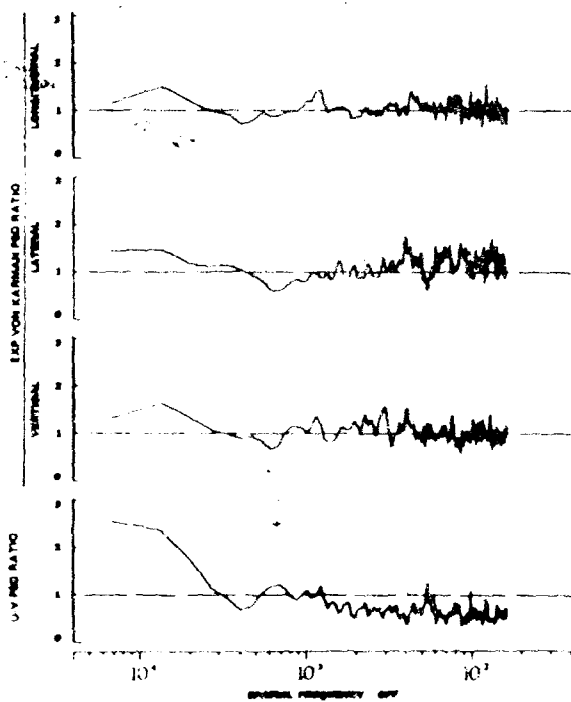
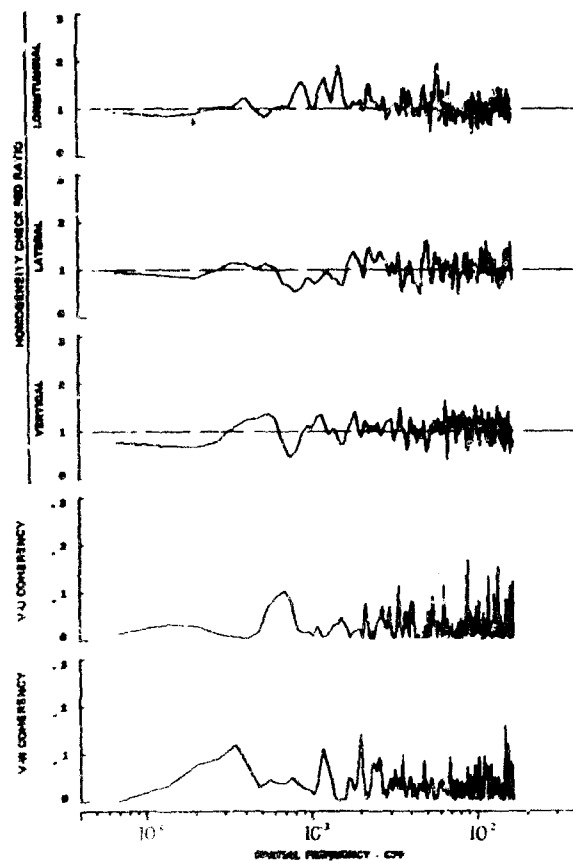
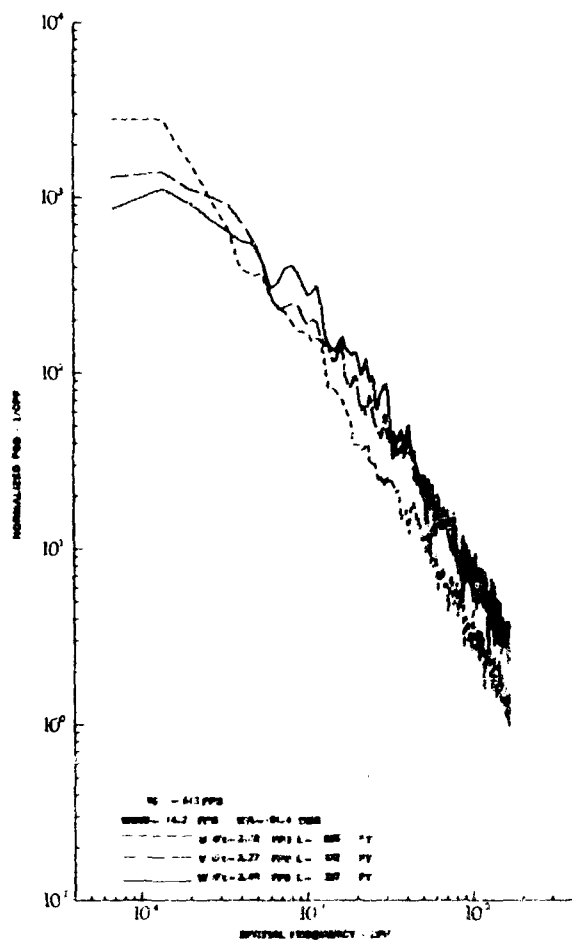




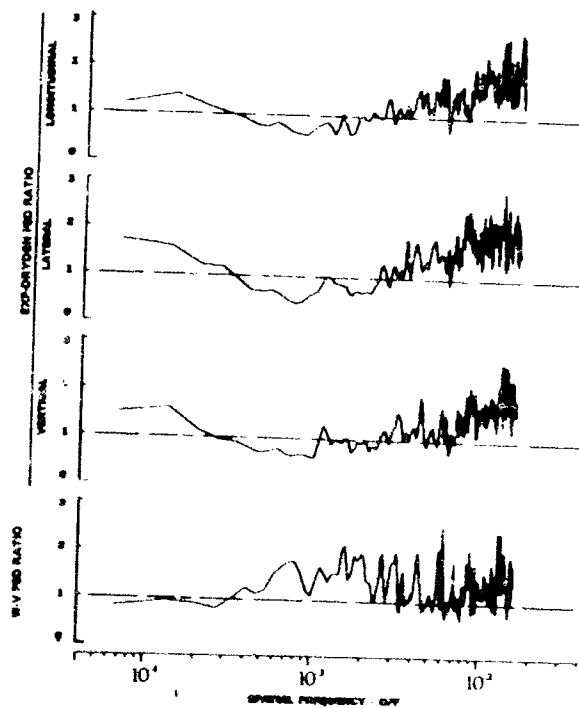
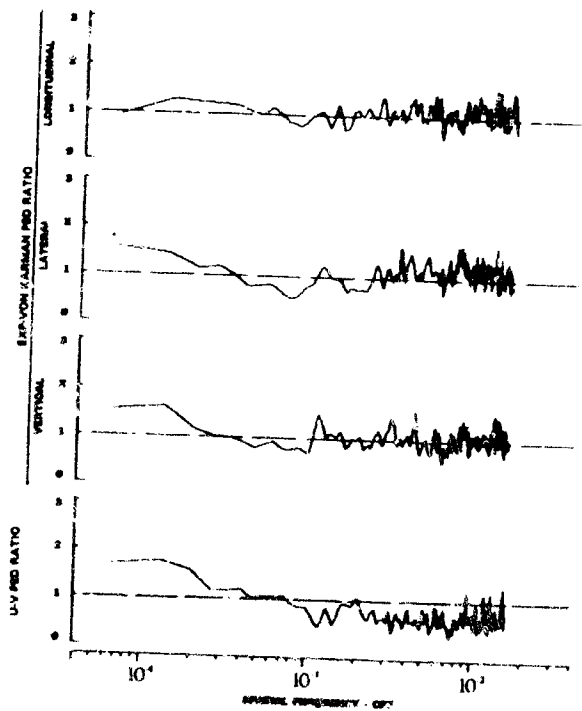
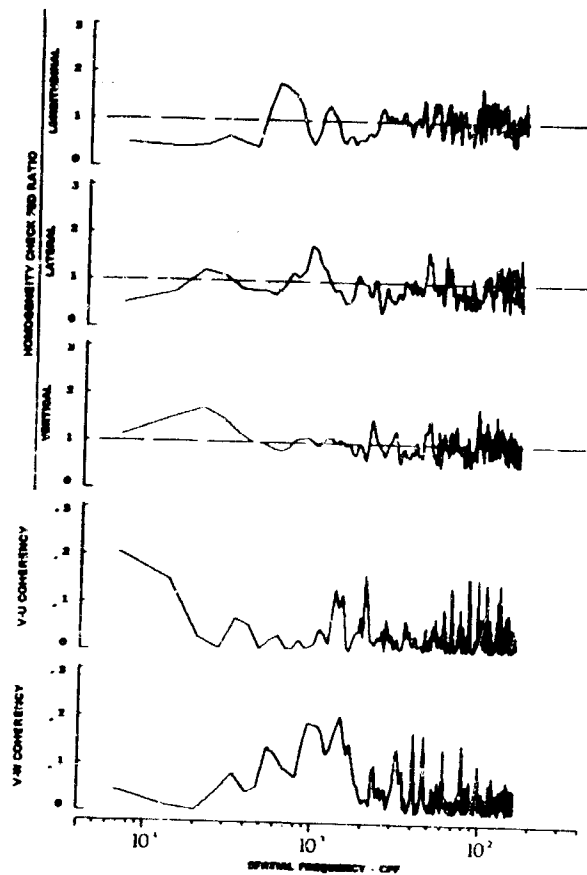
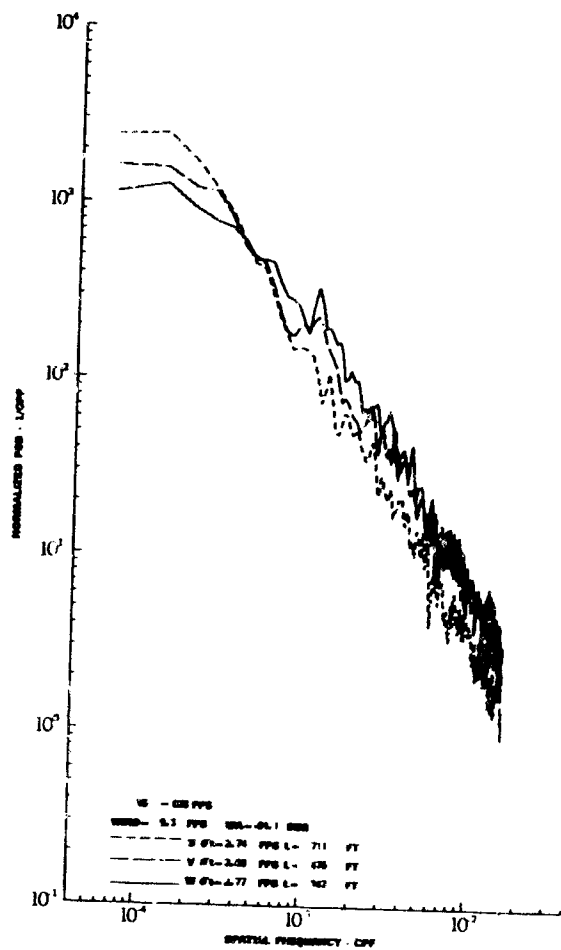
Turbulence Spectra Data For Test 65, Log 3, Category 112331



Turbulence Spectra Data For Test 65, Log 5, Category 114331



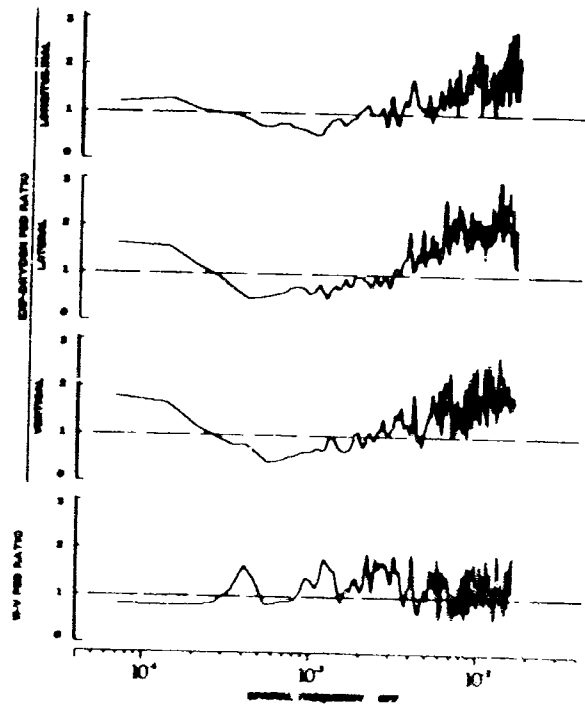
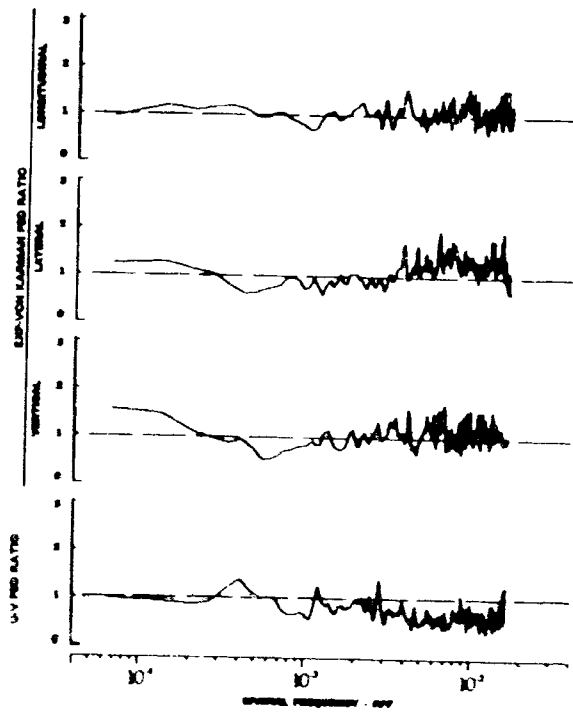
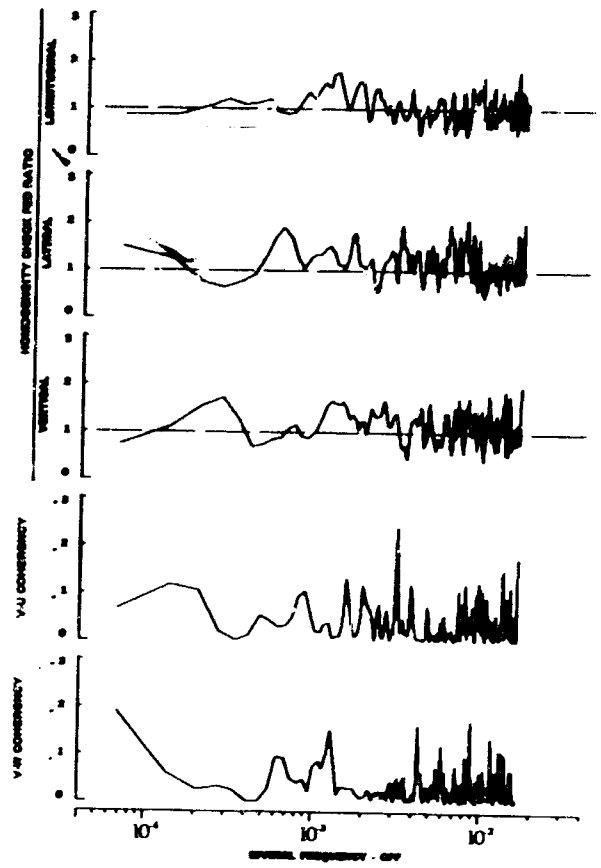
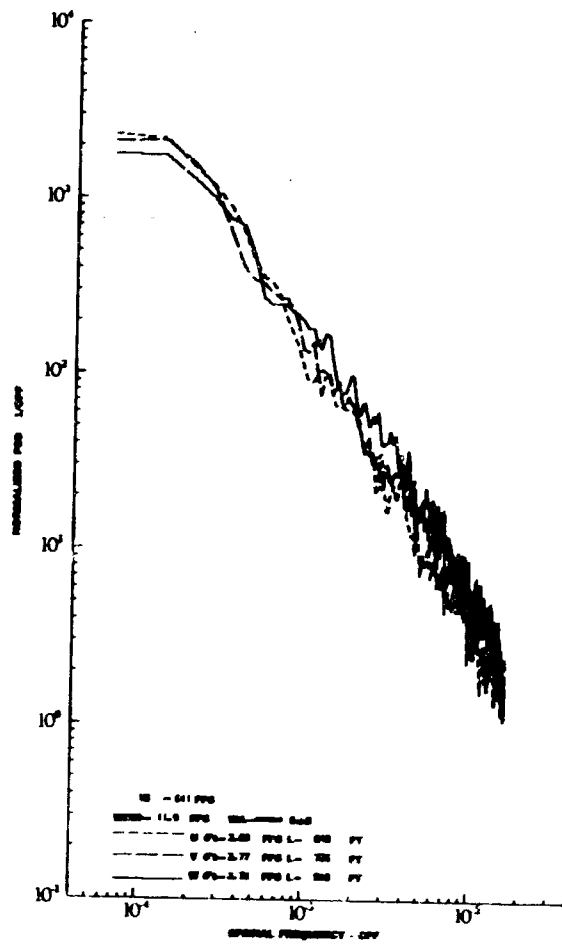
Turbulence Spectra Data For Test 66, Leg 2, Category 312331



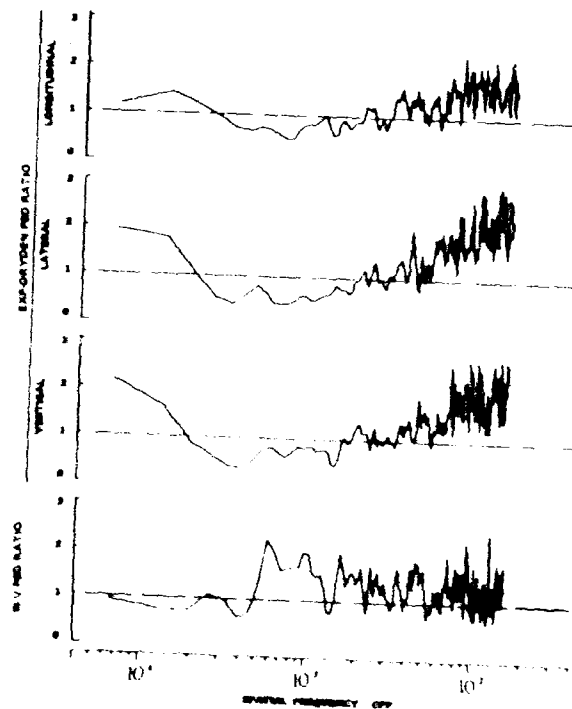
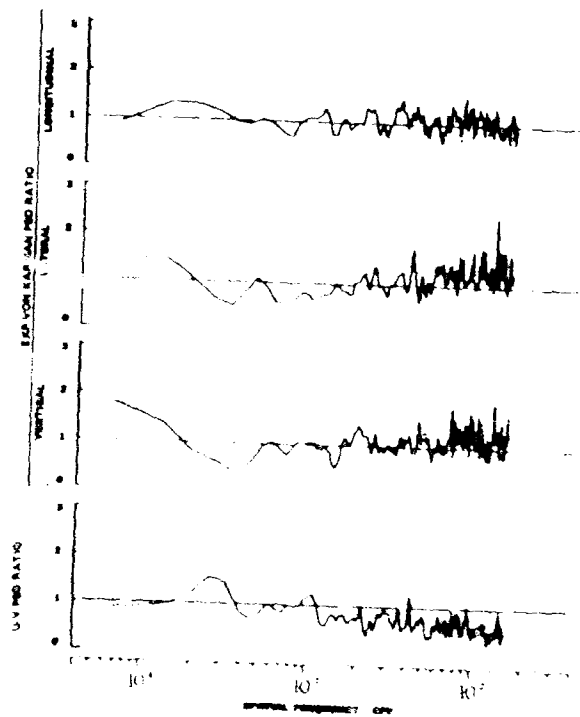
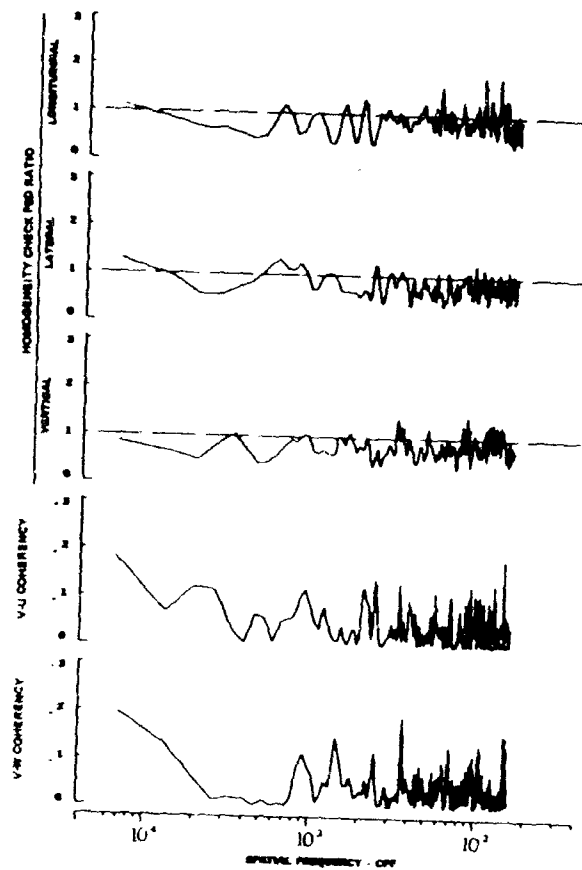
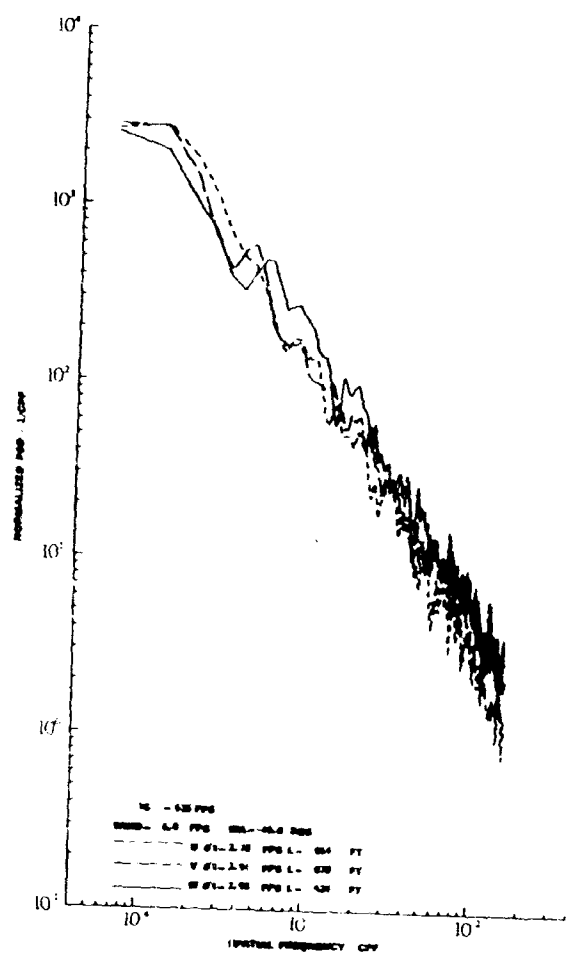
Turbulence Spectra Data For Test 66, Leg 6, Category 113331



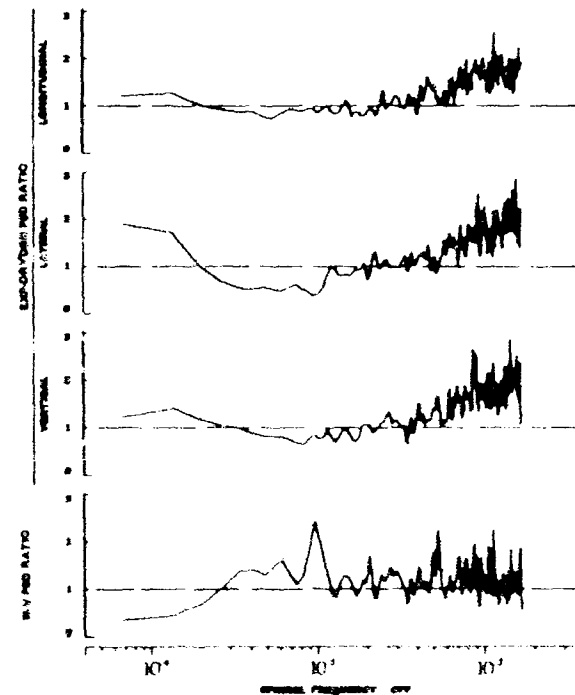
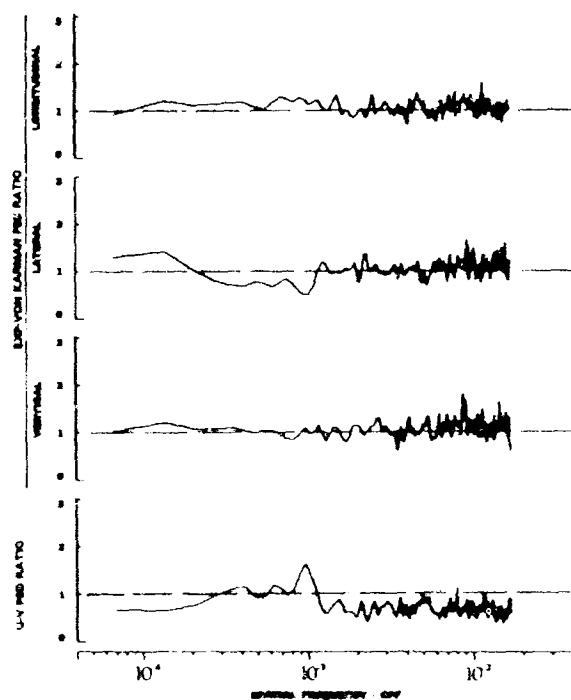
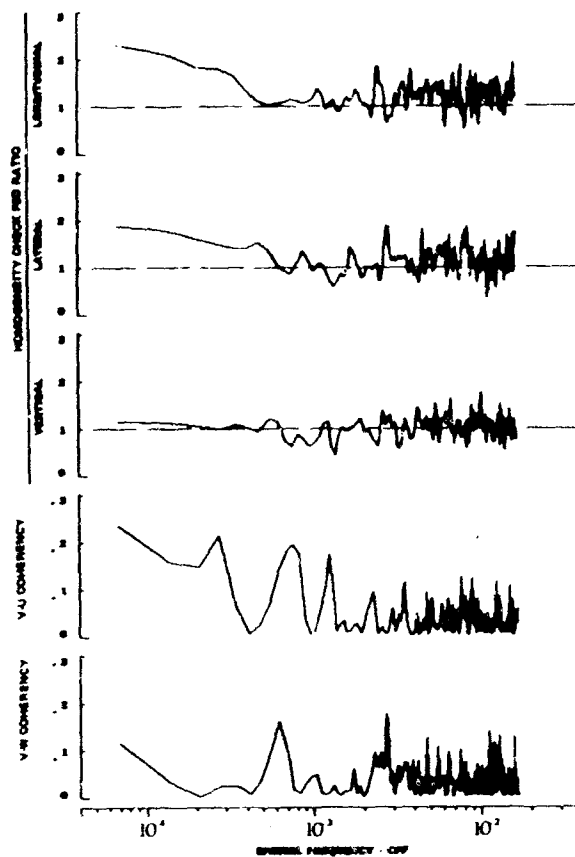




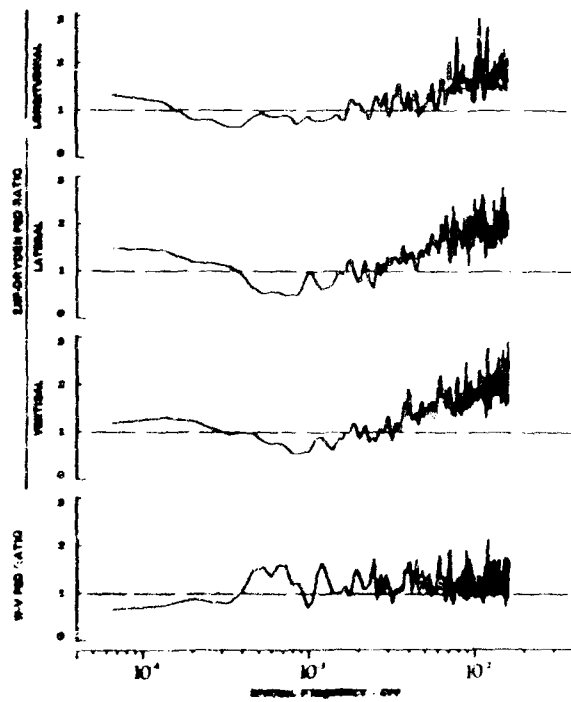
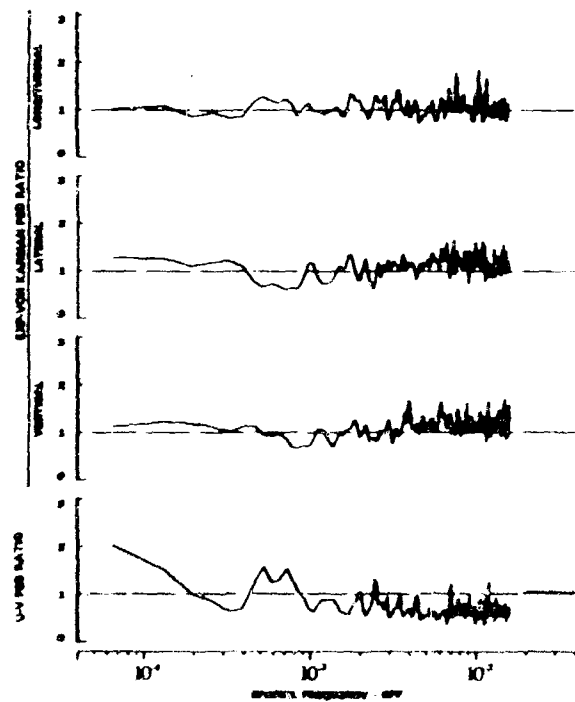
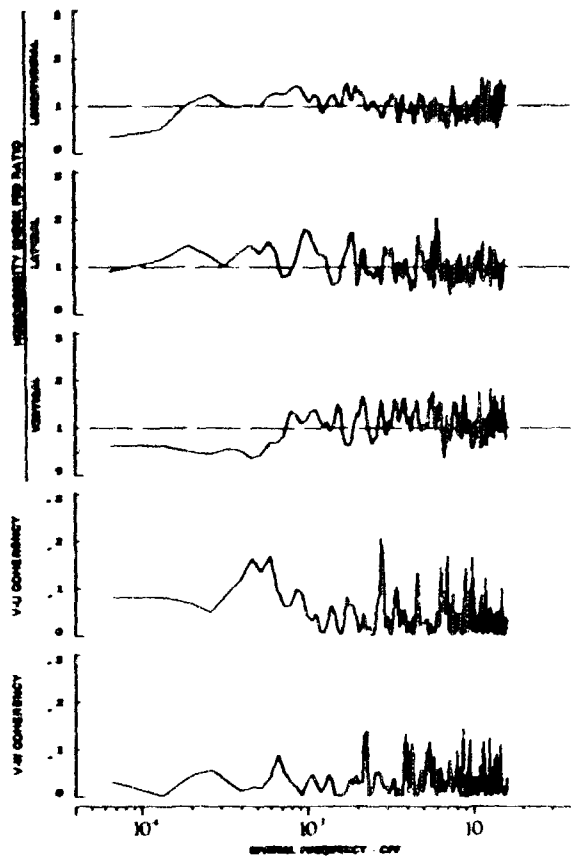
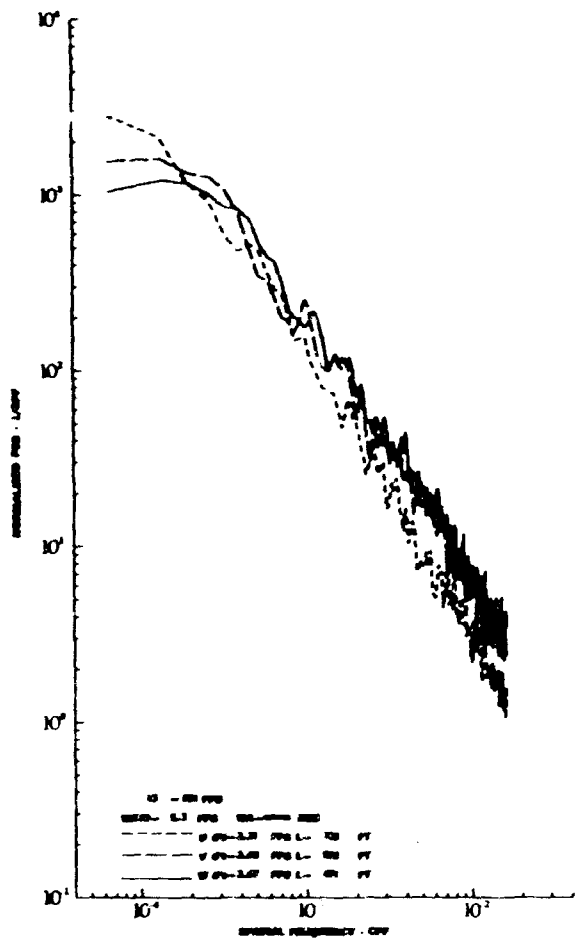
Turbulence Spectra Data For Test 69, Leg 1, Category 224331



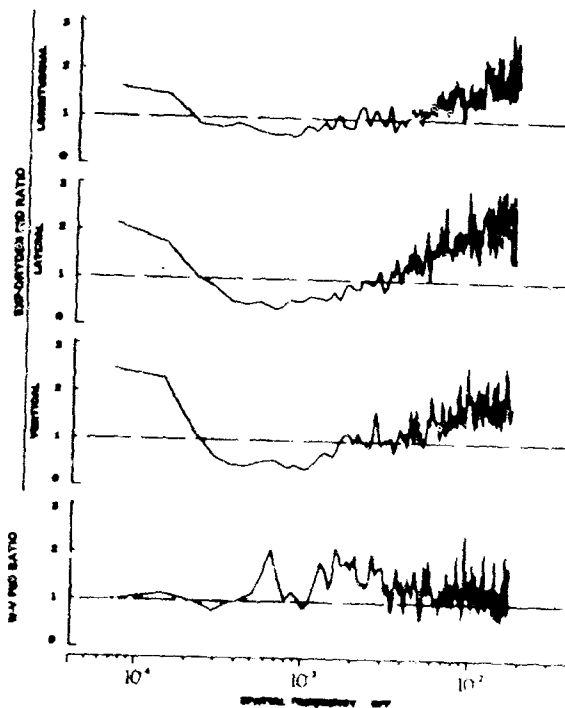
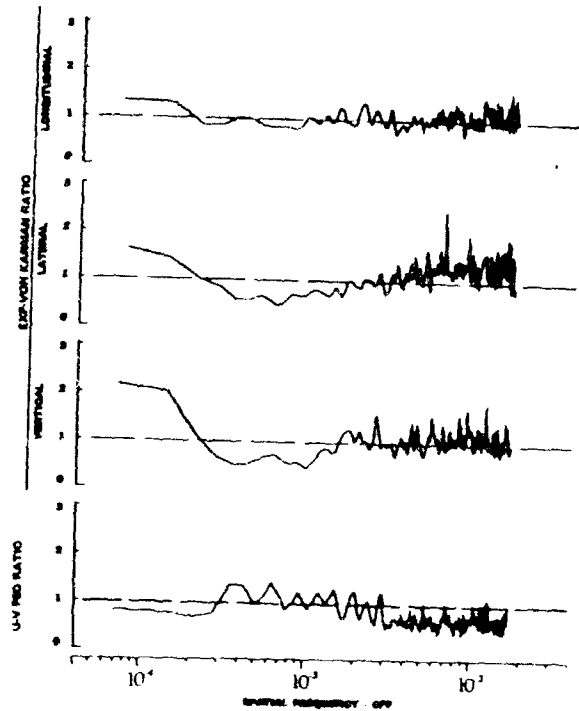
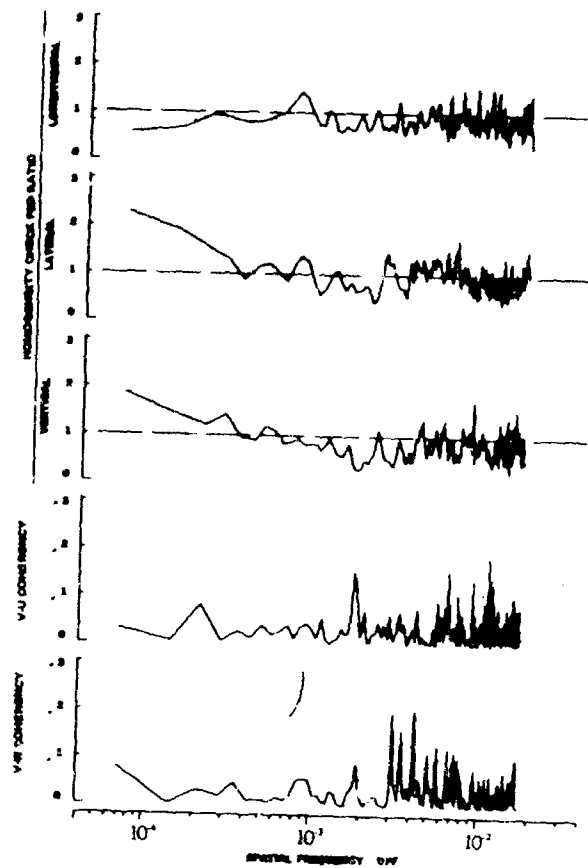
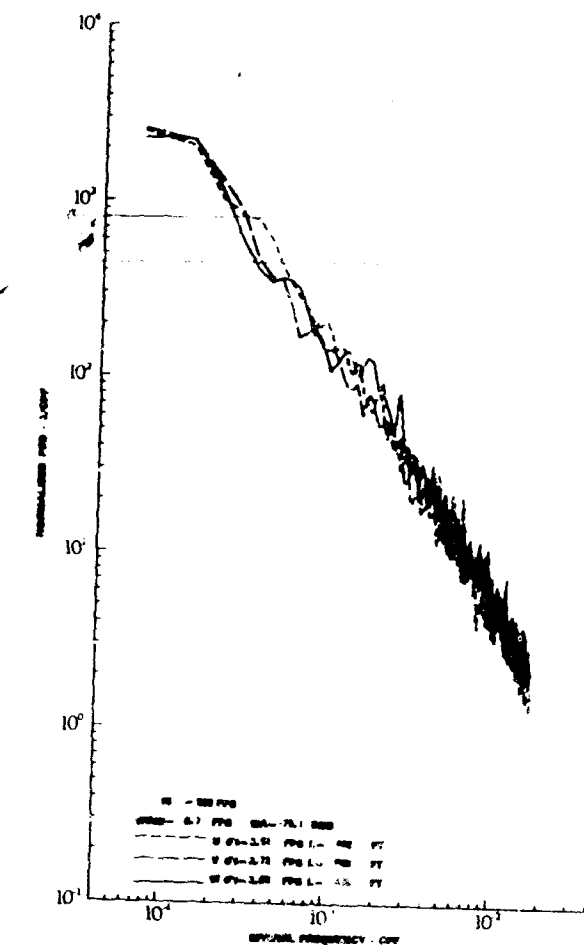
Turbulence Spectra Data For Test 69, Log 3, Category 122331



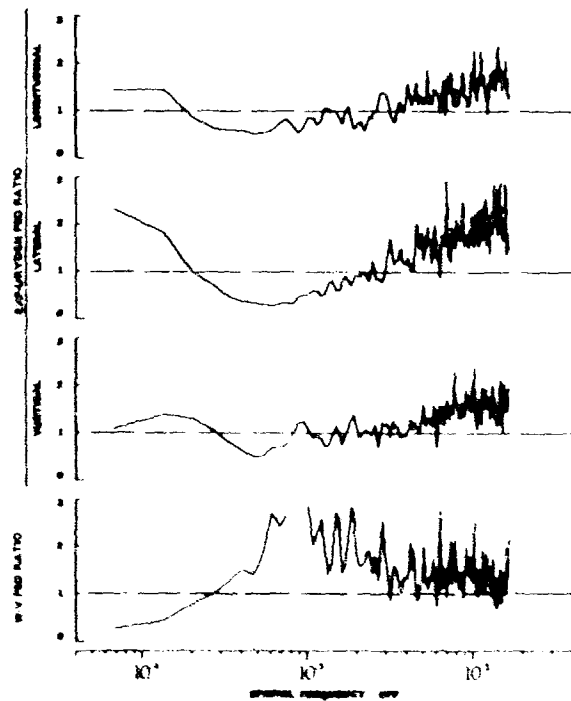
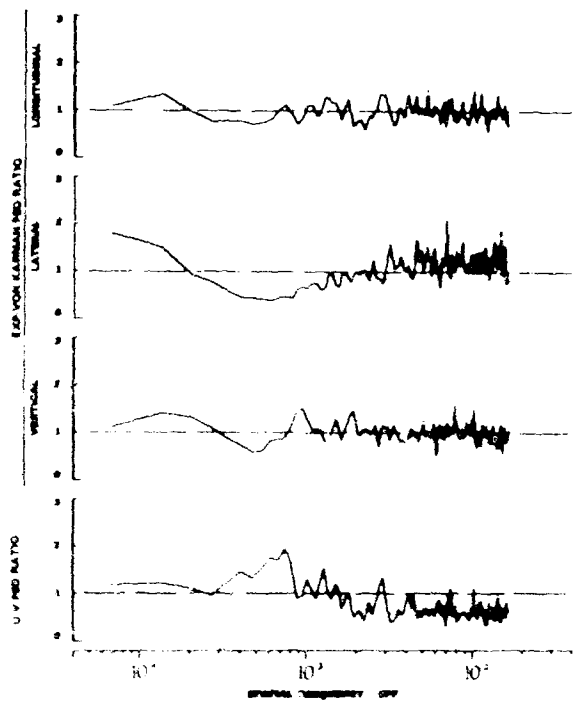
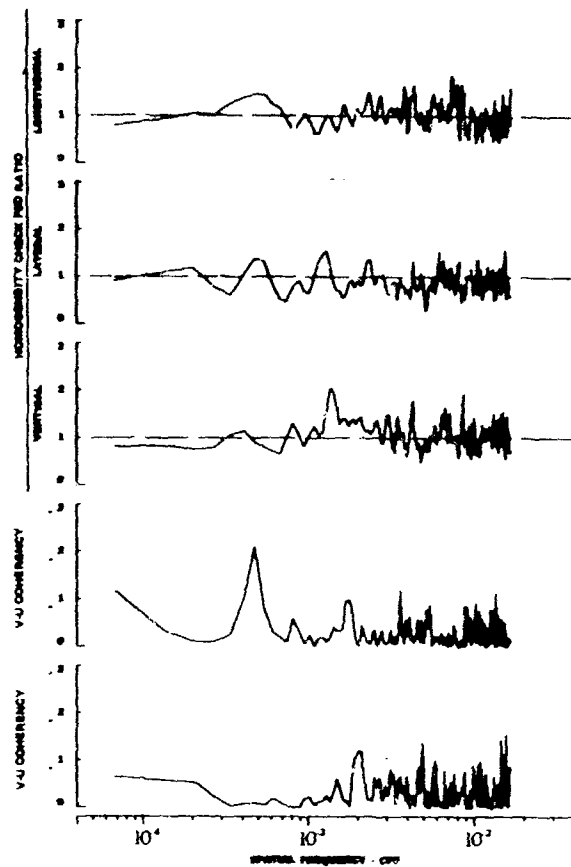
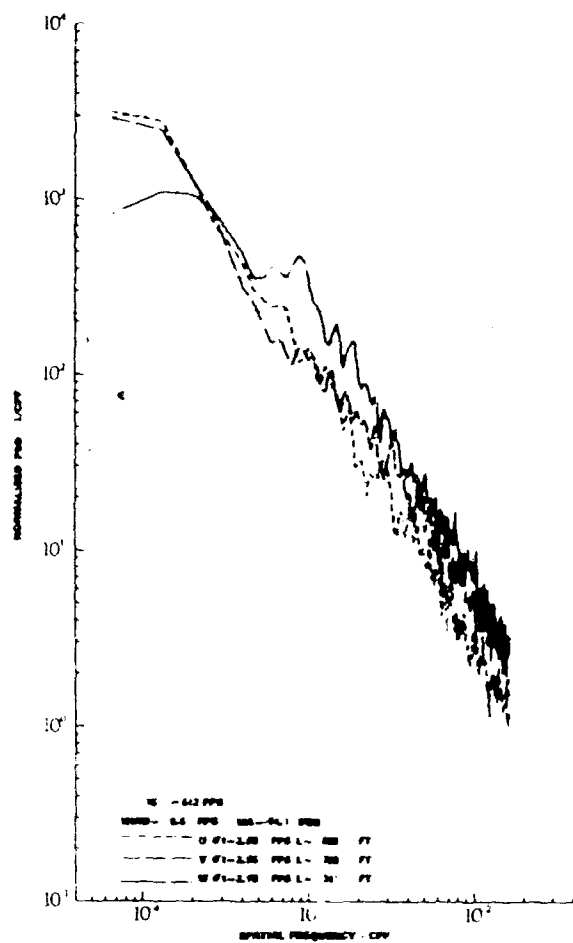
Turbulence Spectra Data For Test 69, Leg 5, Category 121331



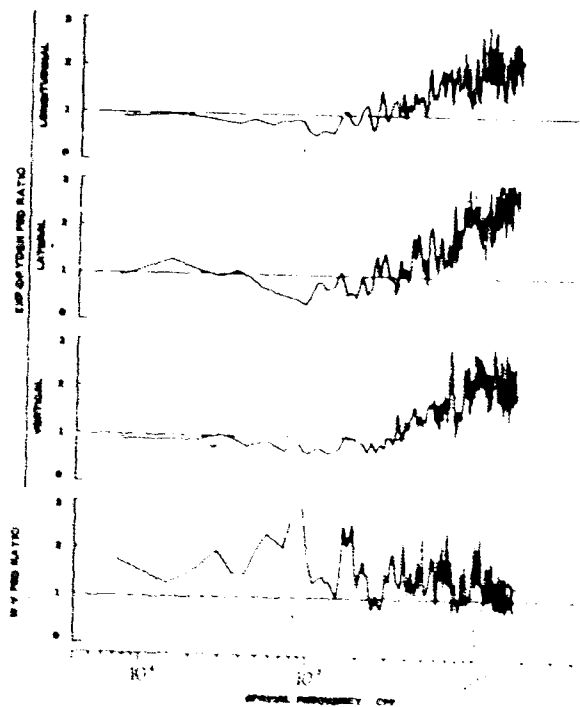
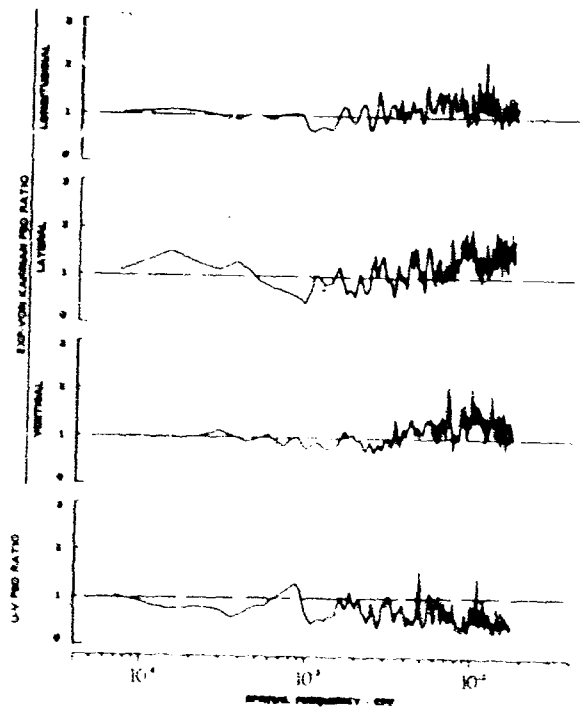
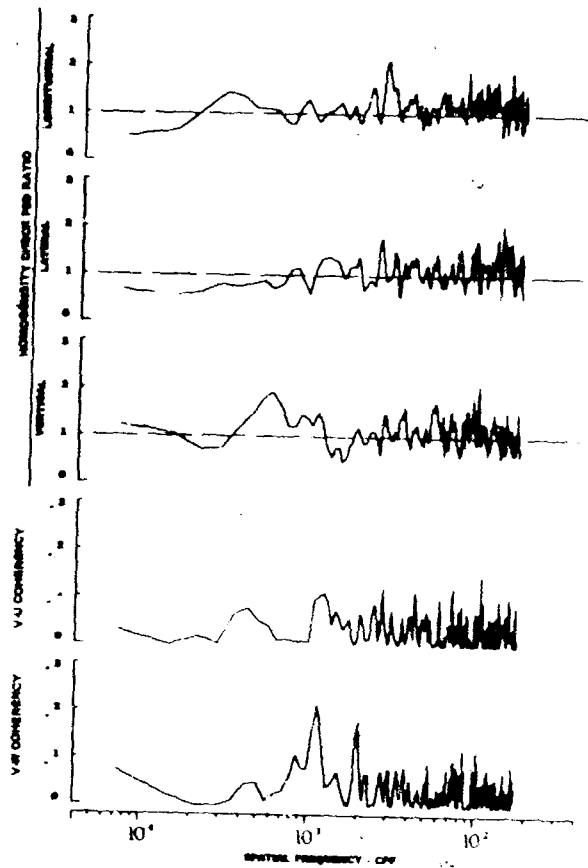
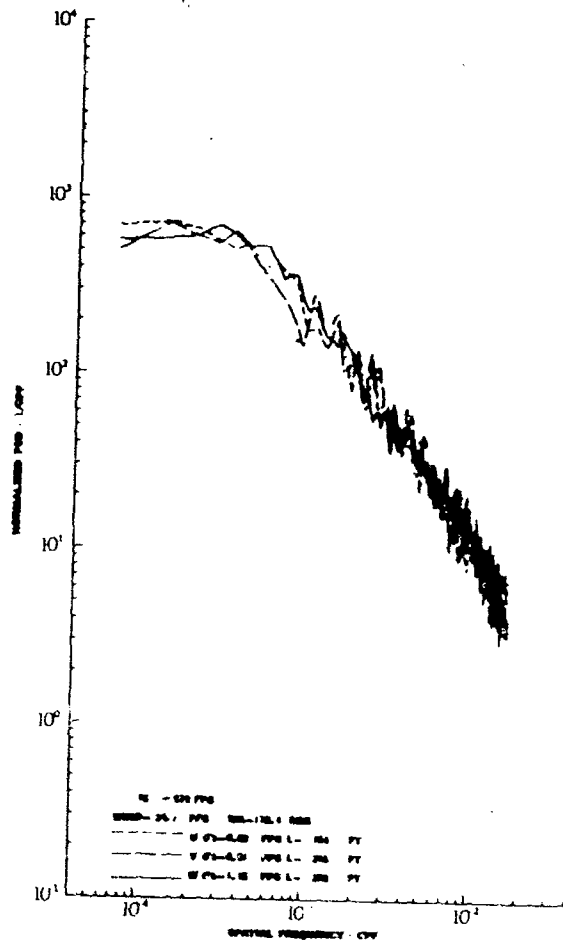
Turbulence Spectra Data For Test 69, Log 7, Category 322331



Turbulence Spectra Data For Test 71, Leg 3, Category 112231

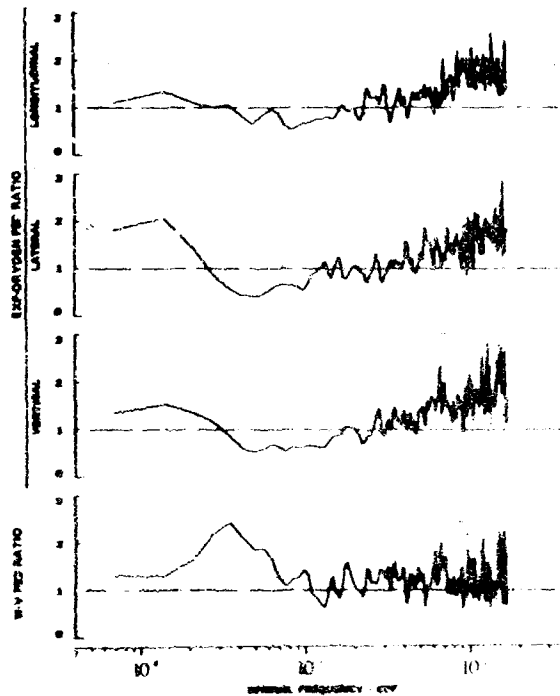
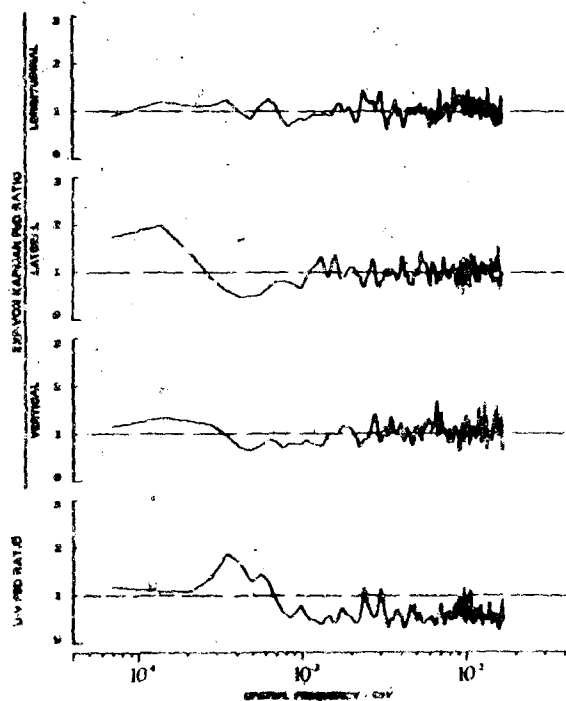
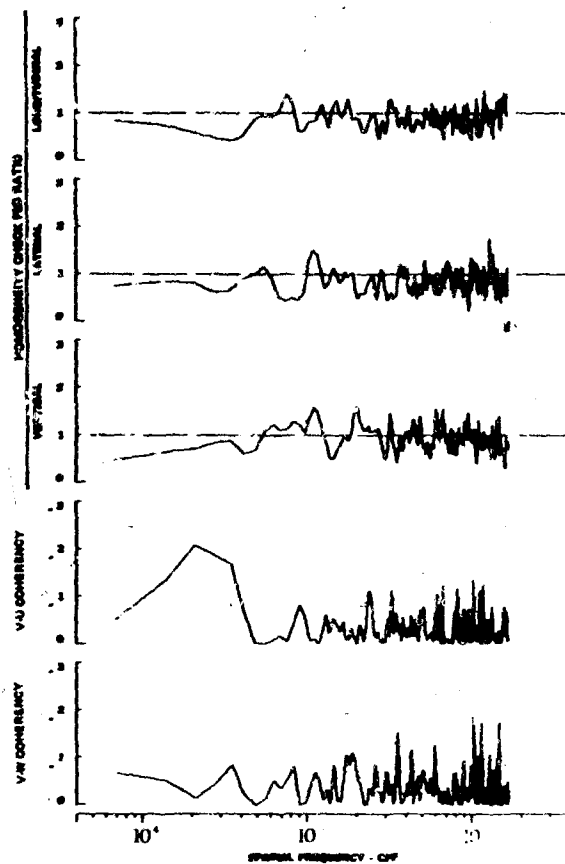
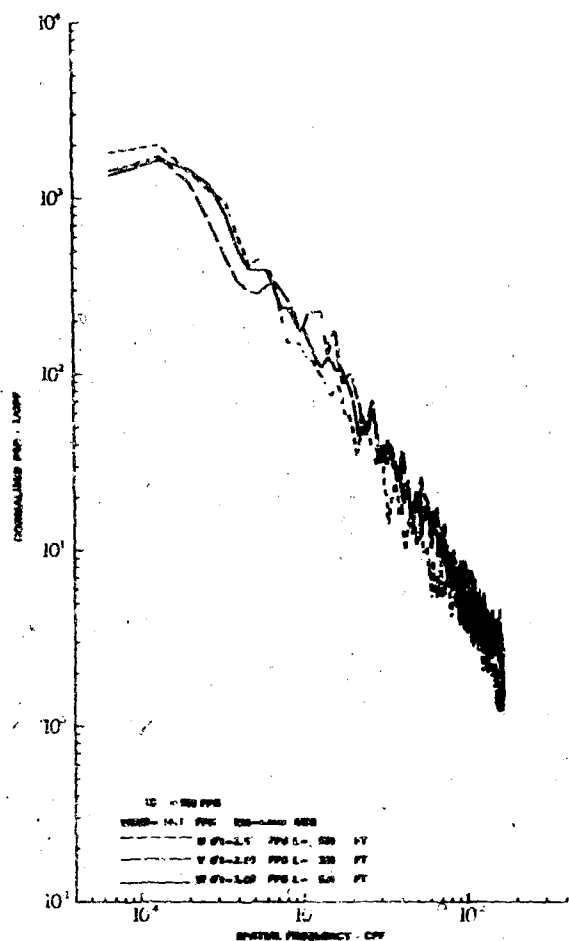


Turbulence Spectra Data For Test 72, Leg 2, Category 312331

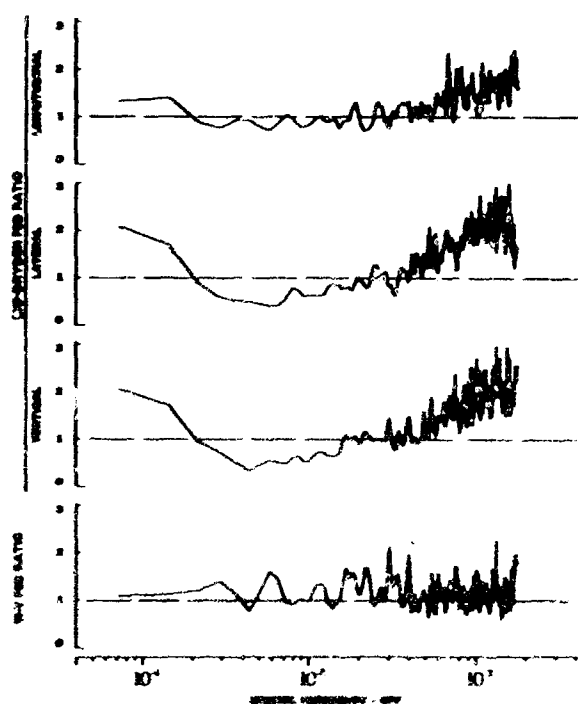
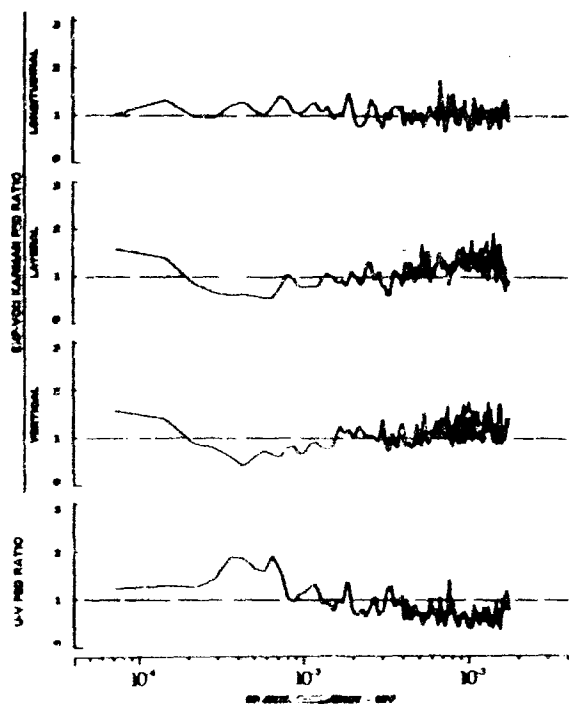
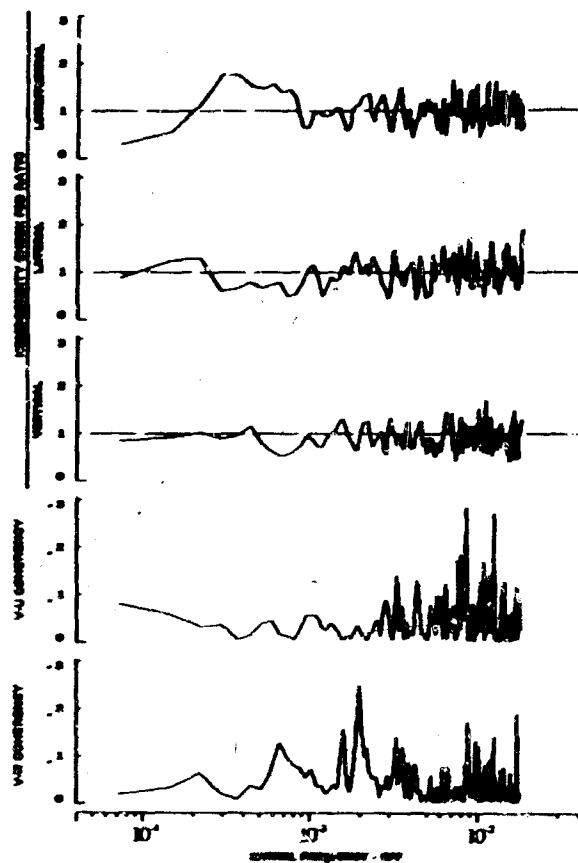
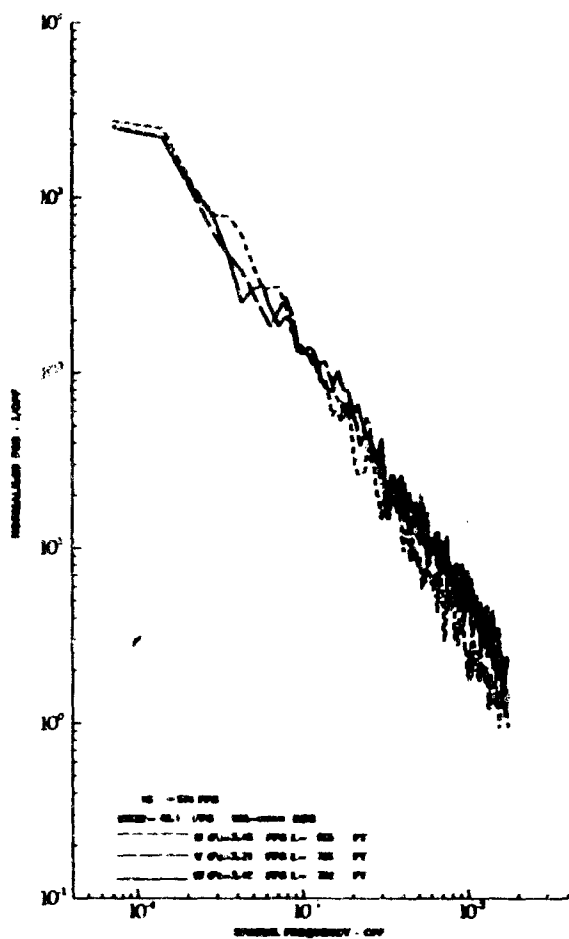


Turbulence Spectra Data For Test 72, Leg 4, Category 612331

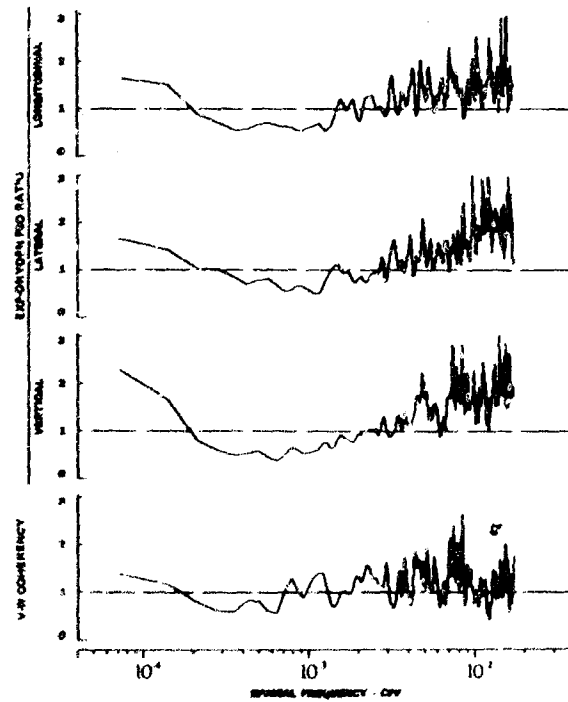
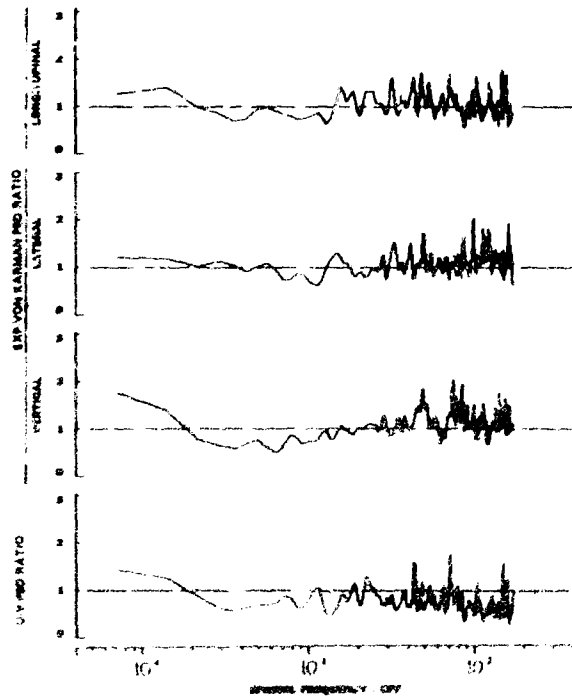
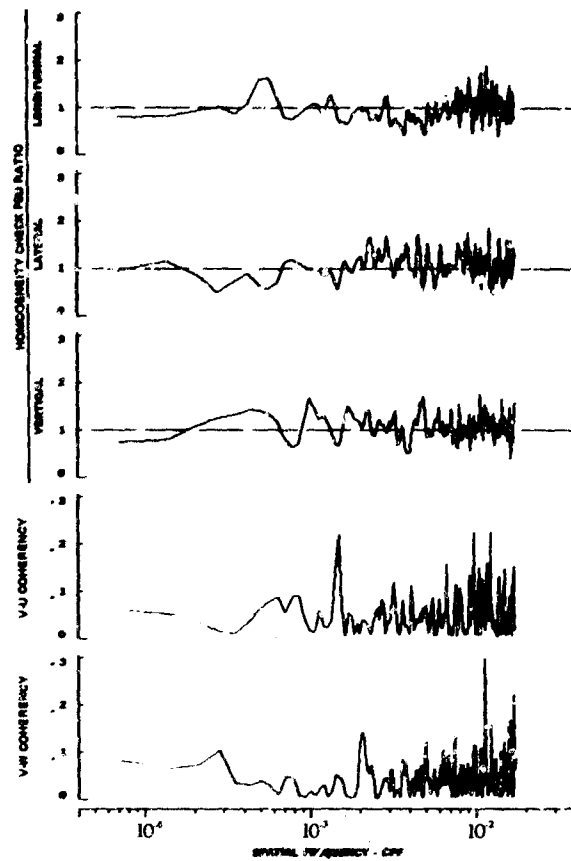
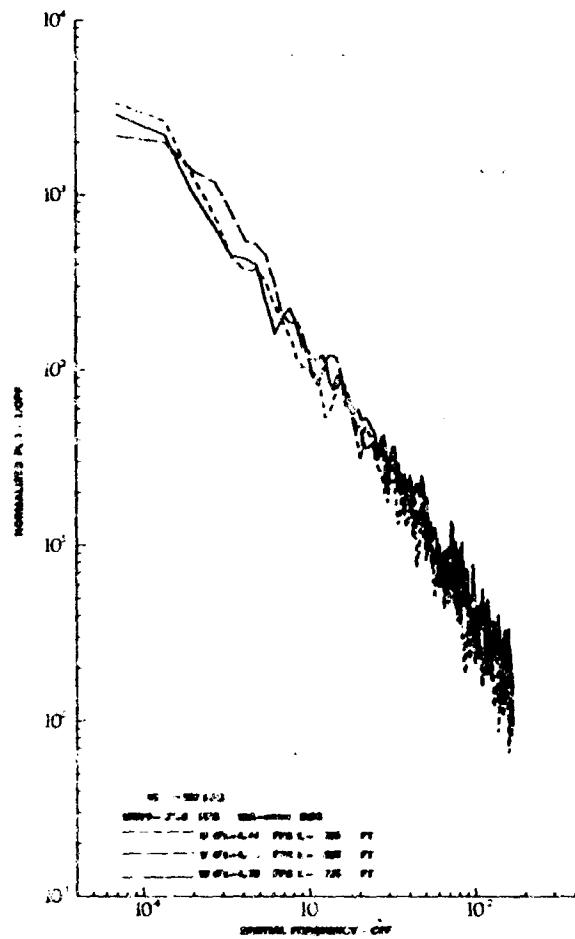




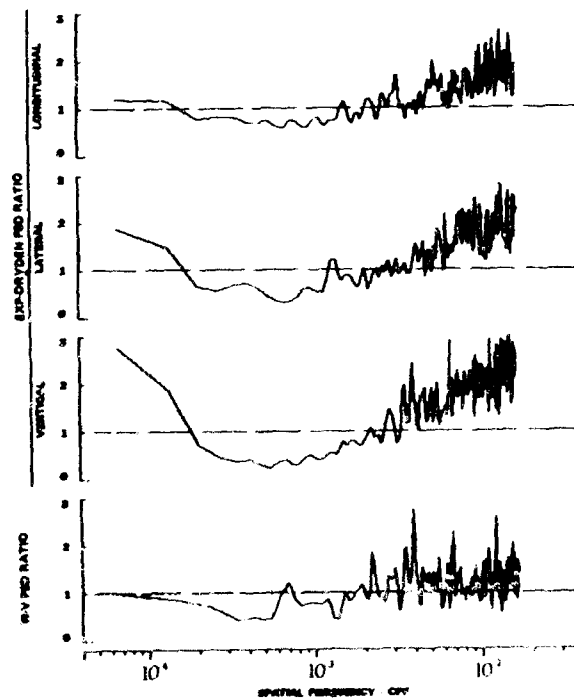
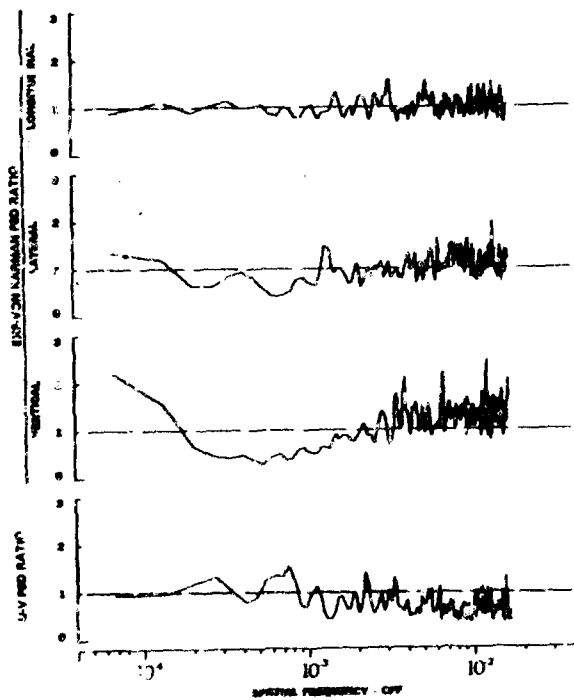
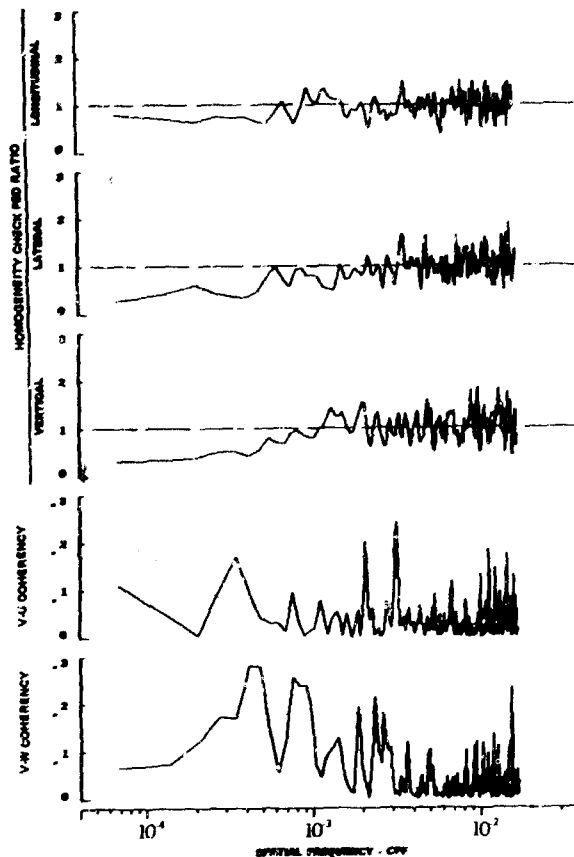
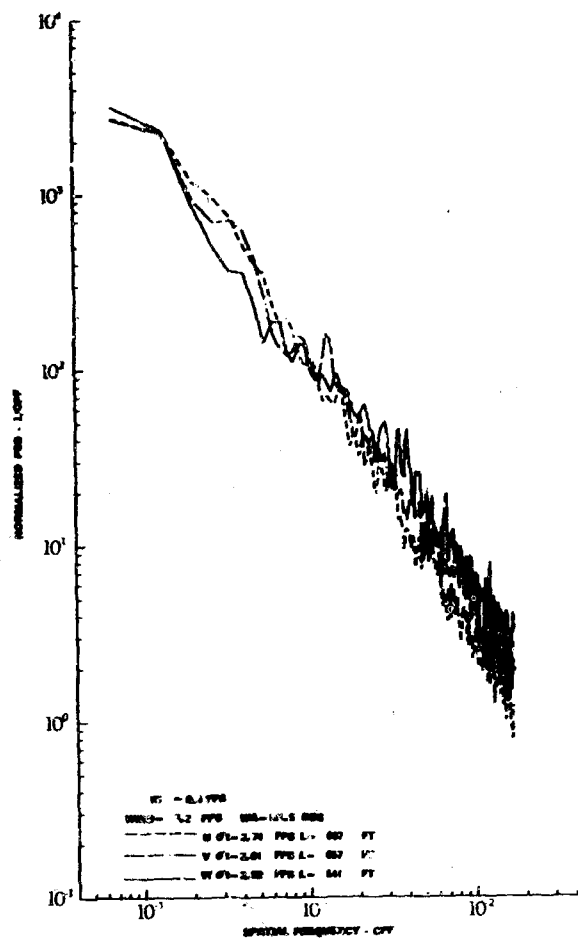
Turbulence Spectra Data For Test 74, Log 6, Category 123231



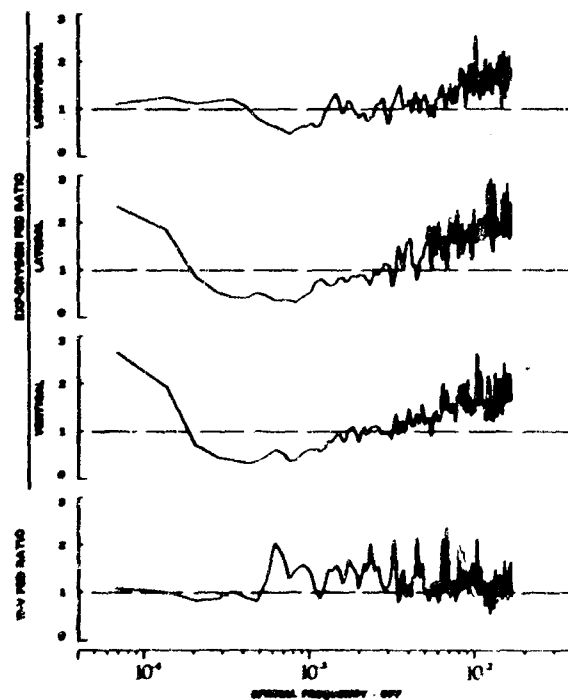
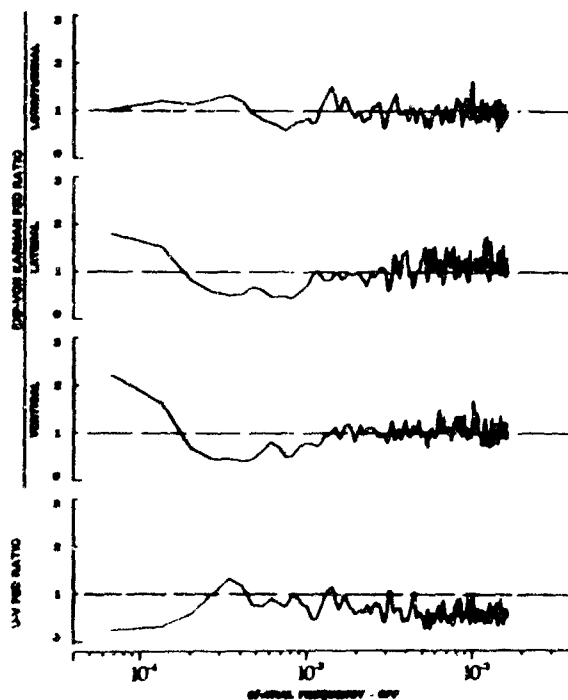
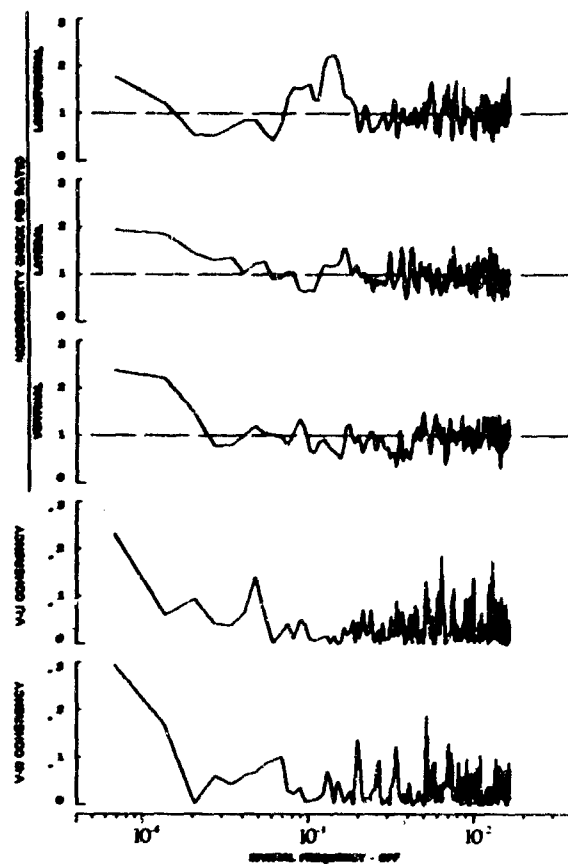
Turbulence Spectra Data For Test 75, Log 1, Category 224331



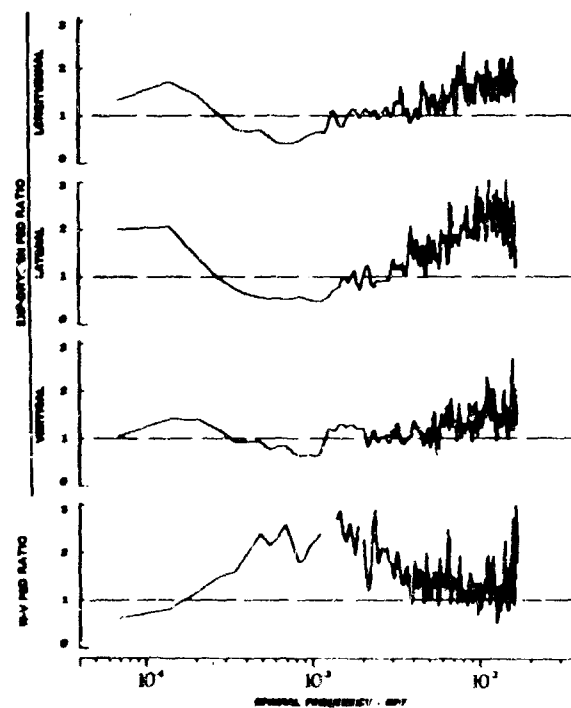
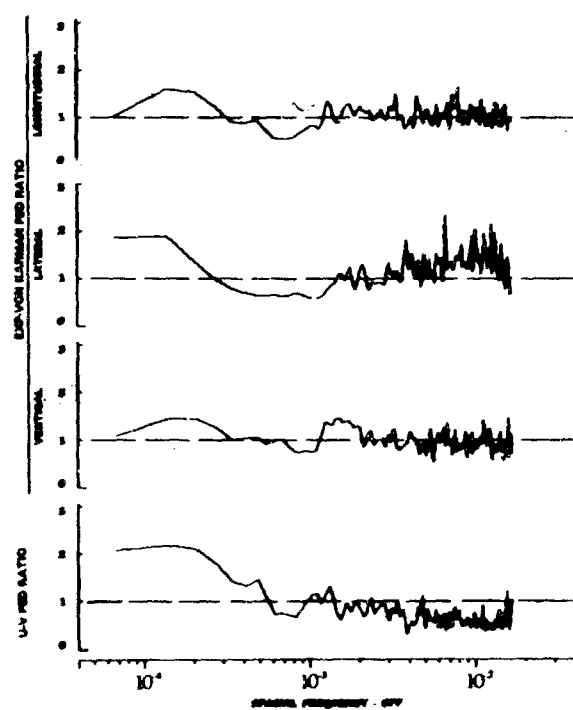
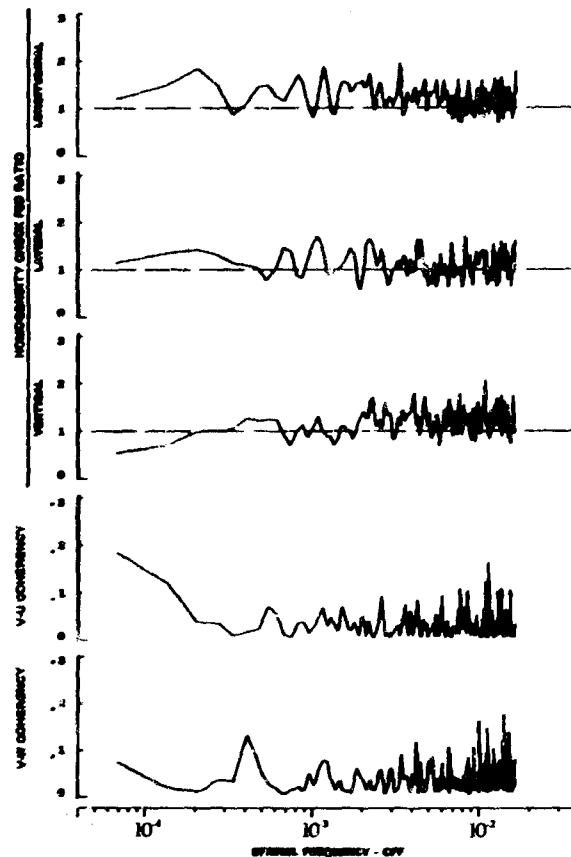
Turbulence Spectra Data For Test 75, Leg 5, Category 122331



Turbulence Spectra Data for Test 77, Leg 3, Category 112231



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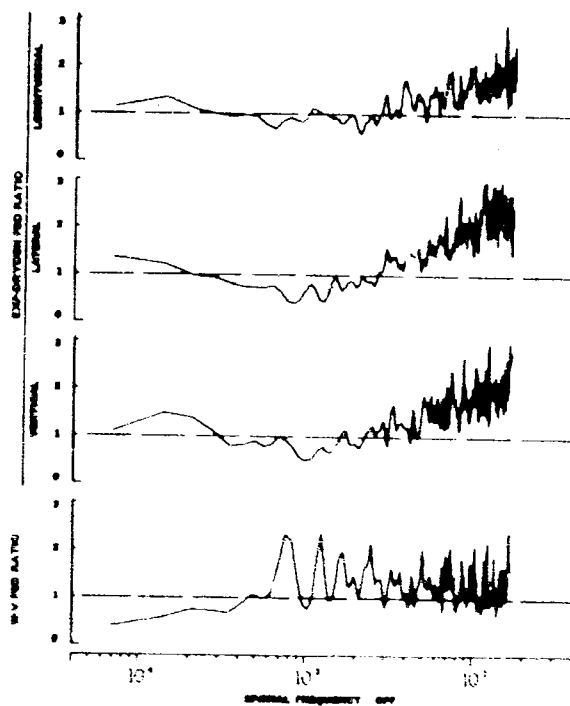
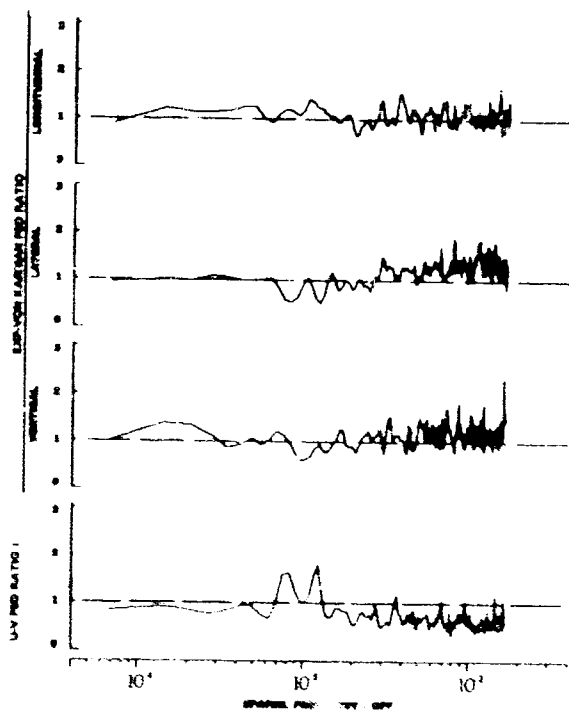
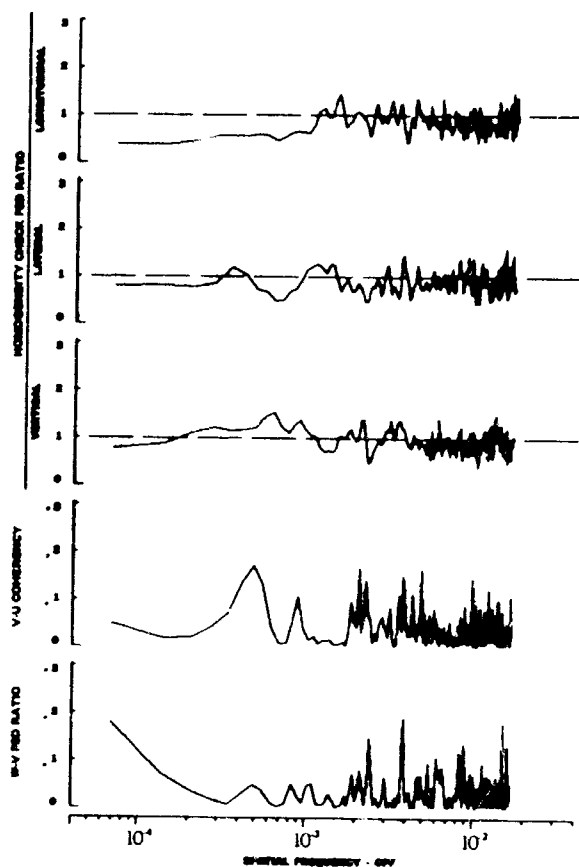
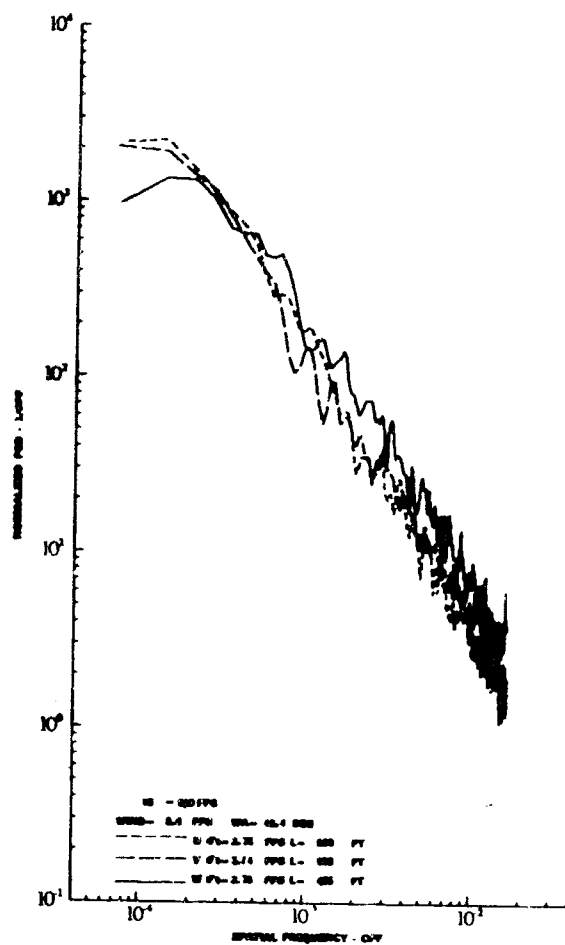
**Turbulence Spectra Data For Test 78, Leg 2, Category 312331**



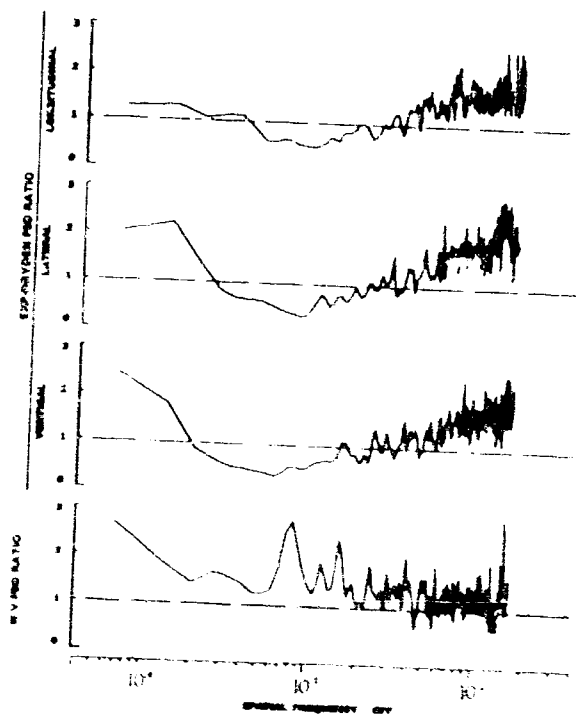
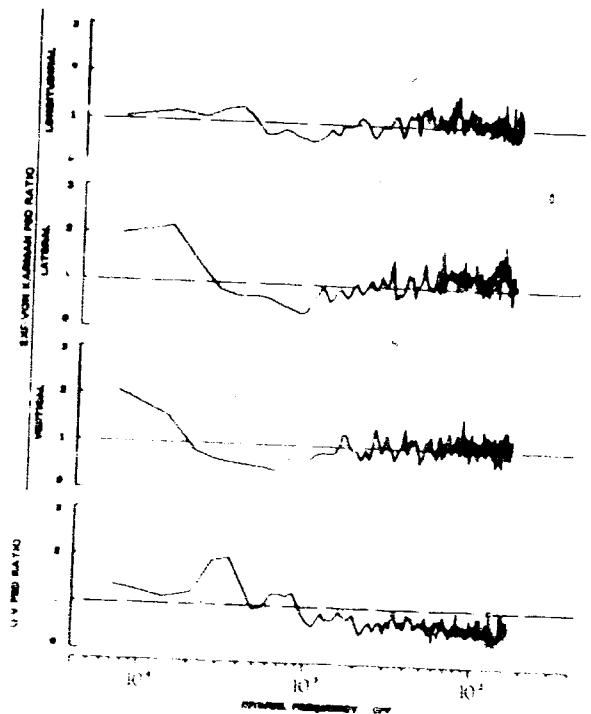
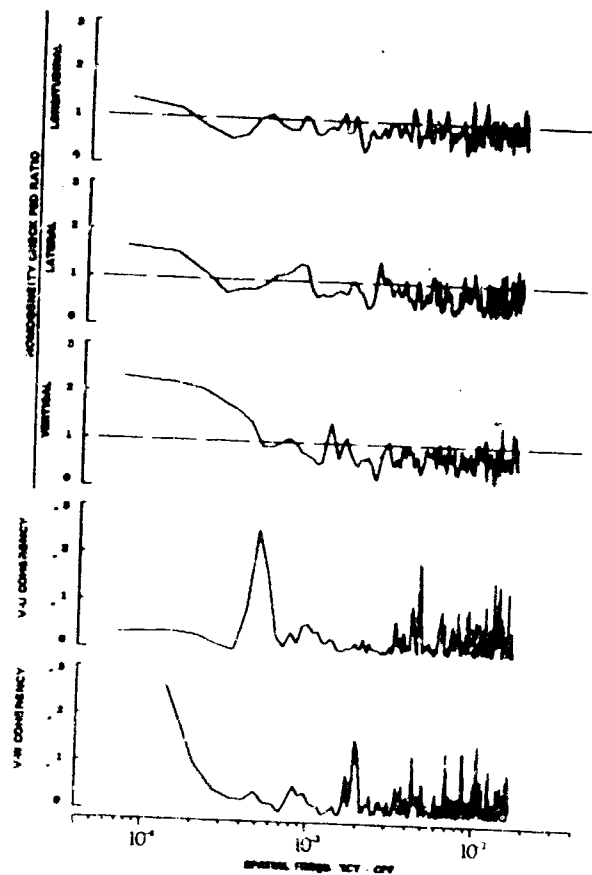
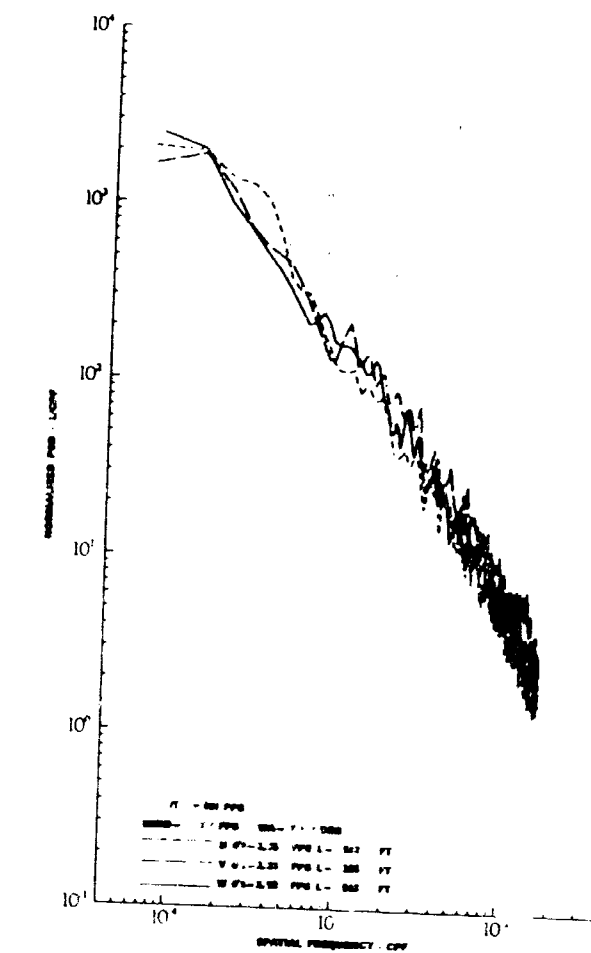




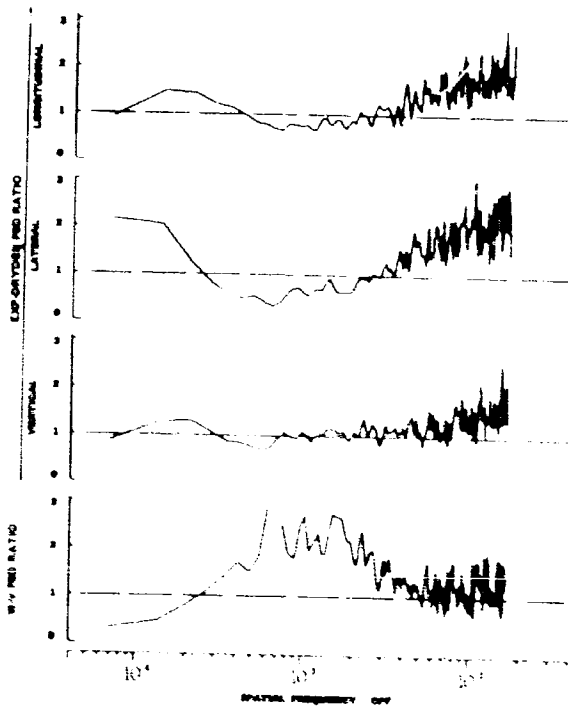
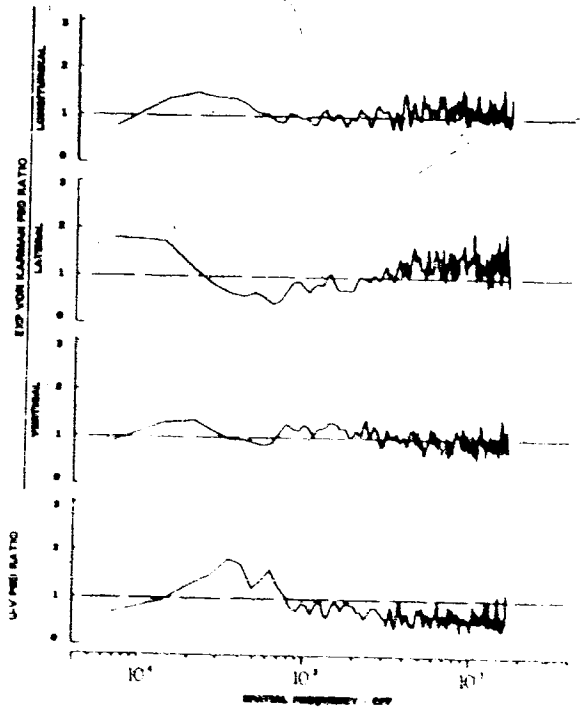
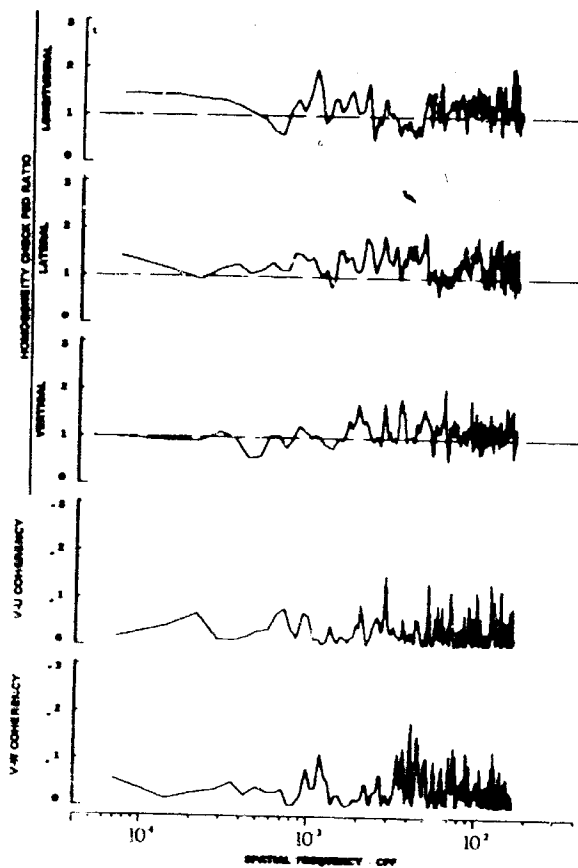
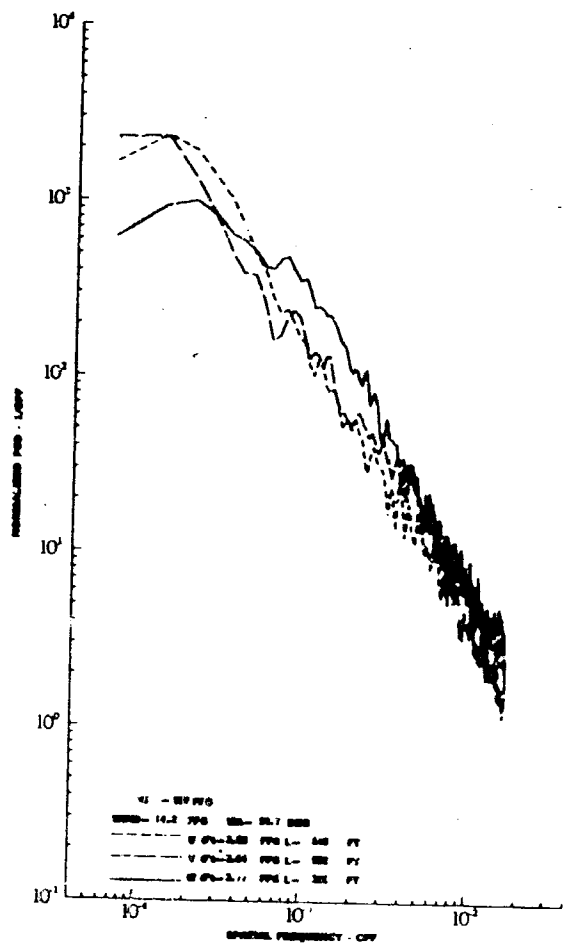




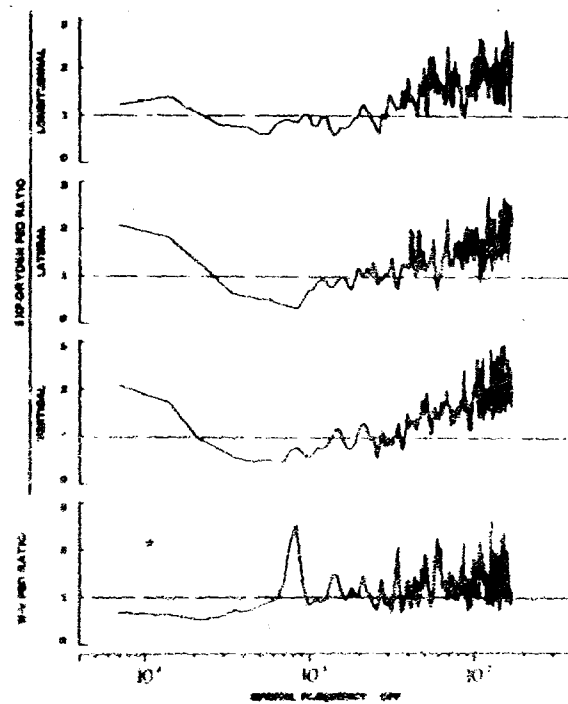
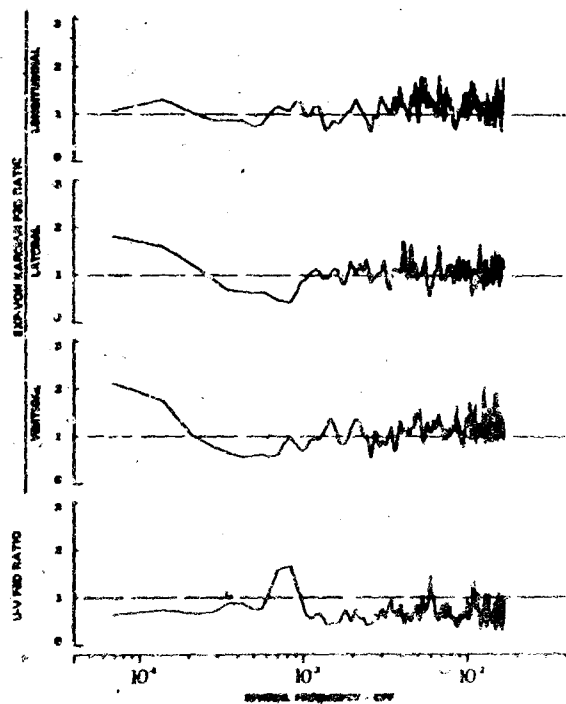
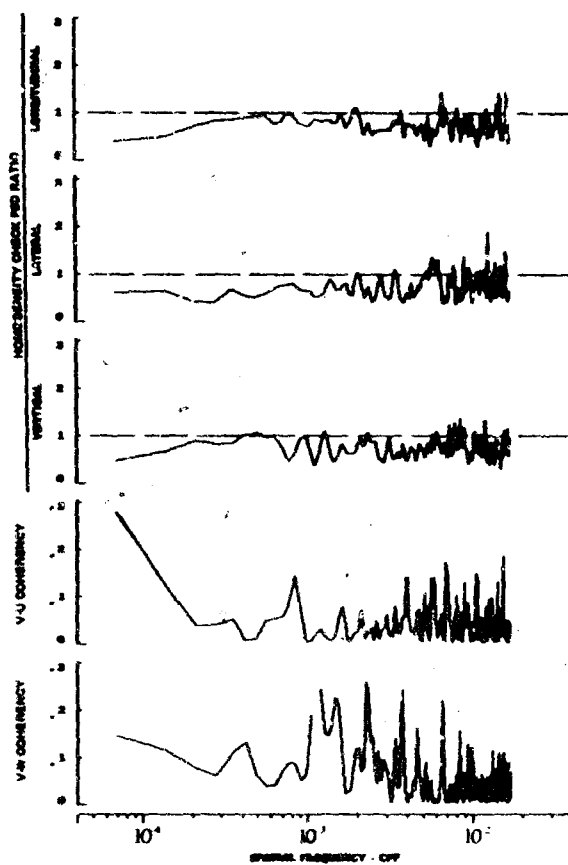
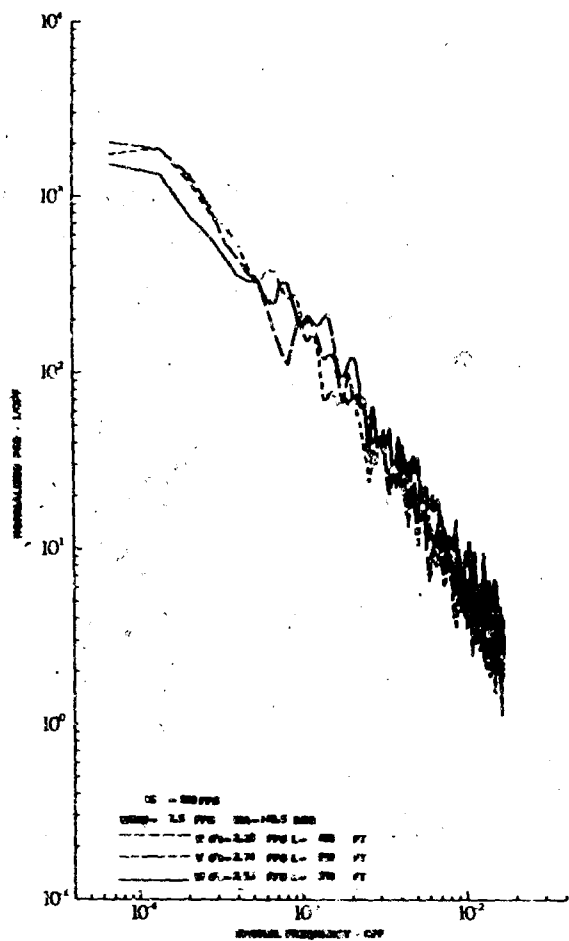
Turbulence Spectra Data For Test 80, Leg 6, Category 122331



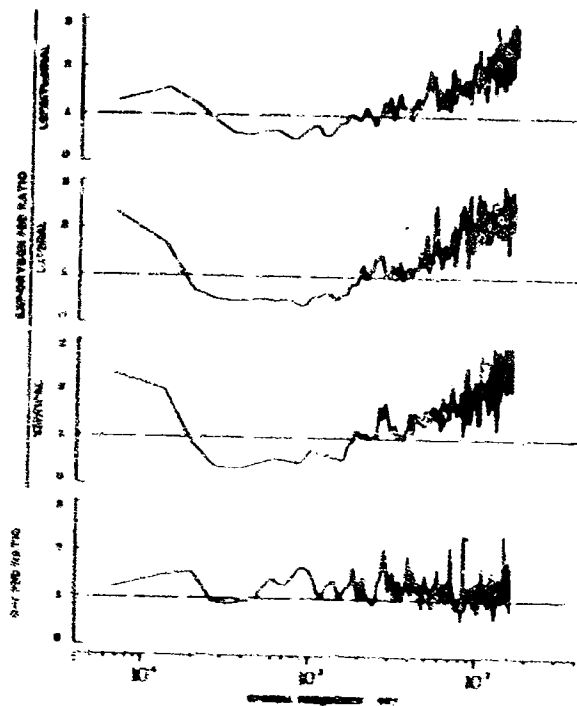
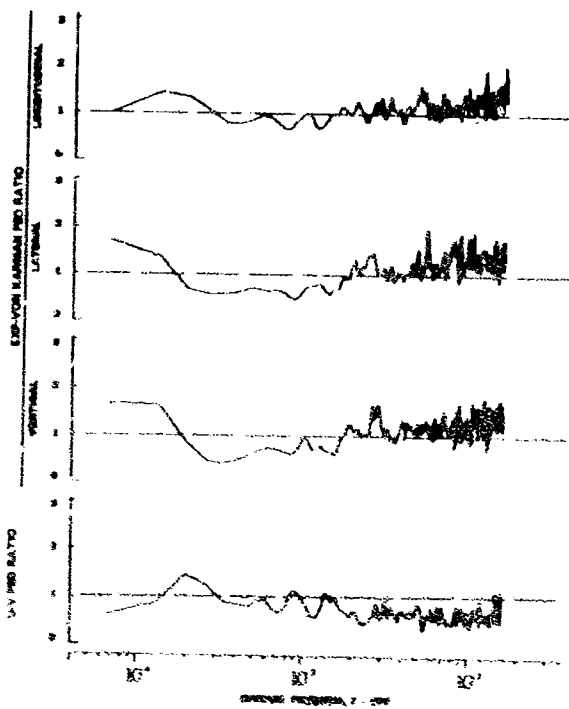
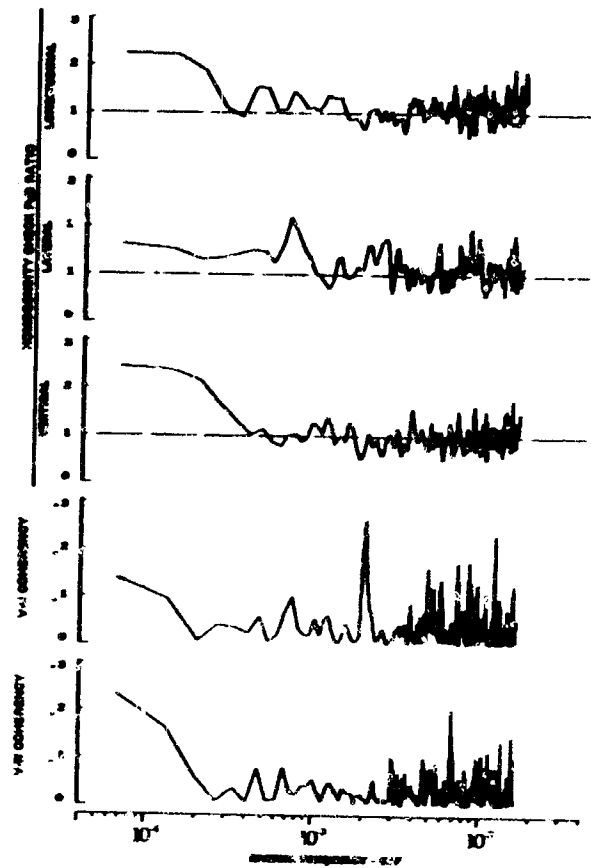
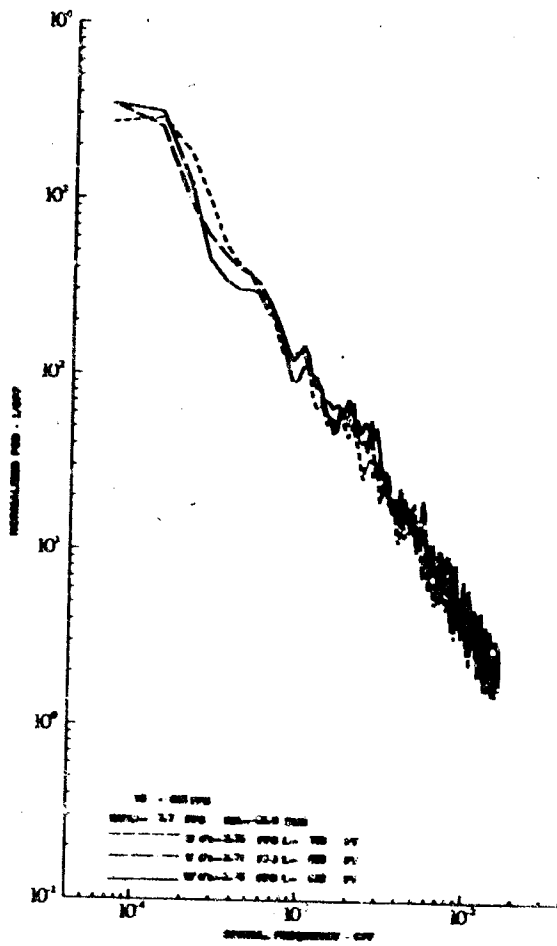
Turbulence Spectra Data For Test 81, Leg 7, Category 312231



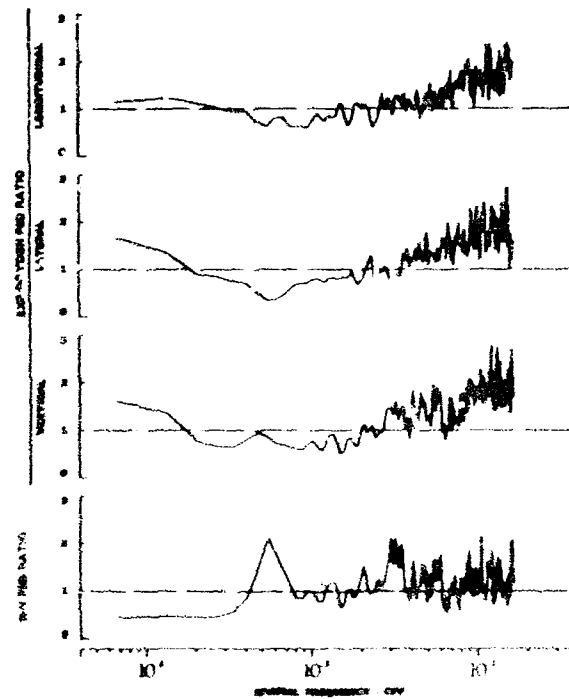
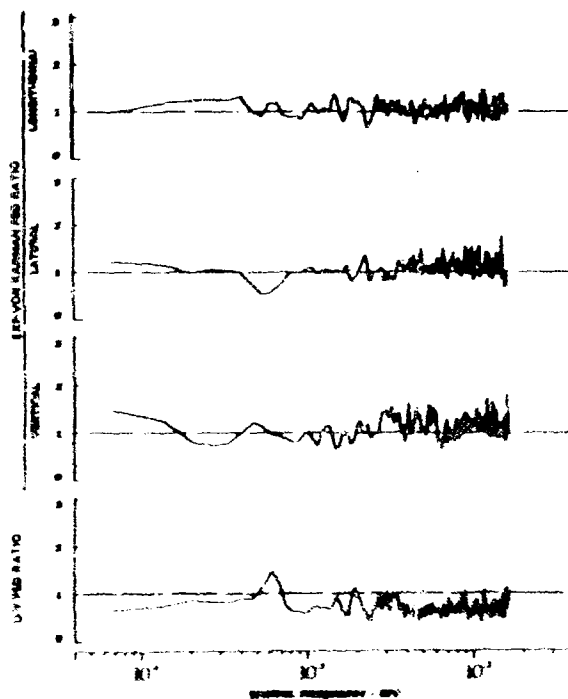
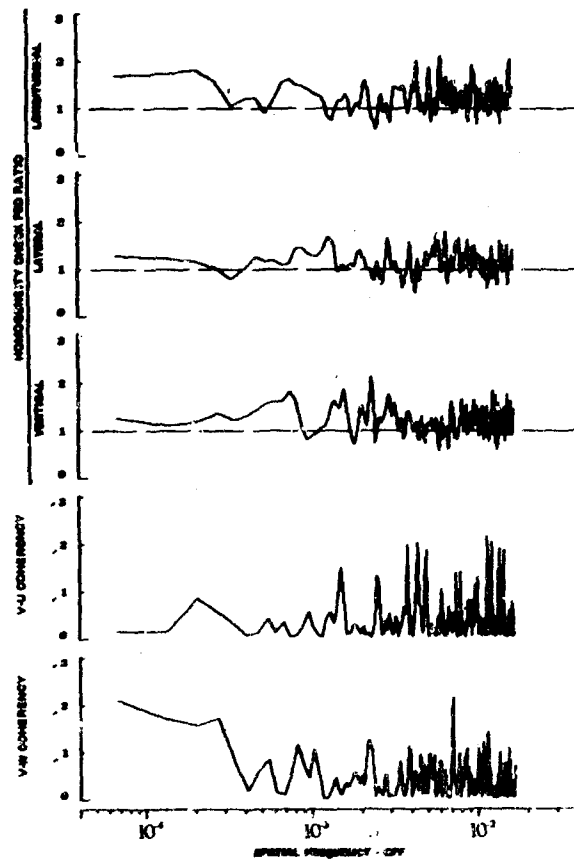
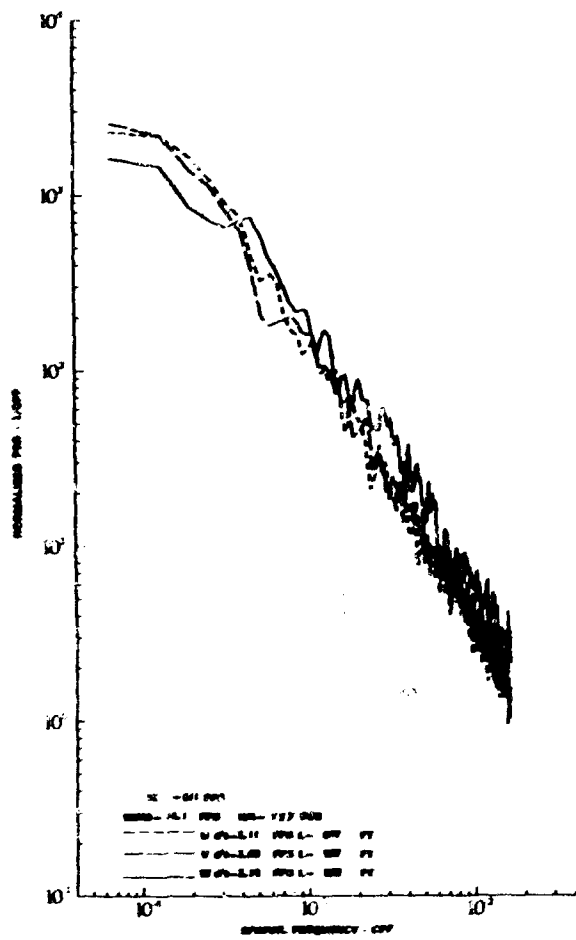
Turbulence Spectra Data For Test 82, Leg 2, Category 312331



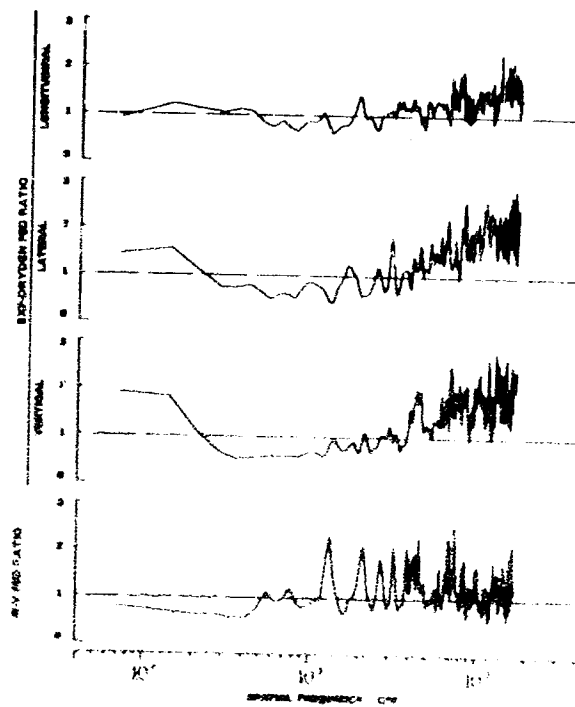
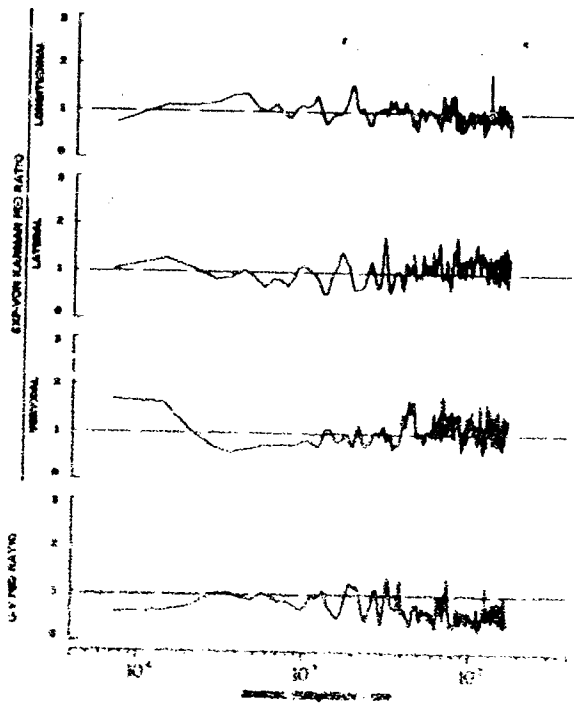
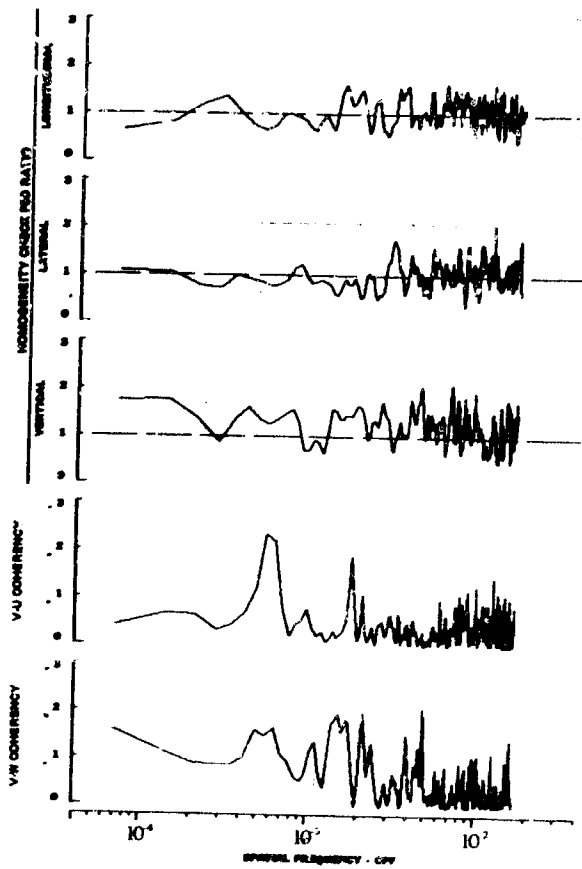
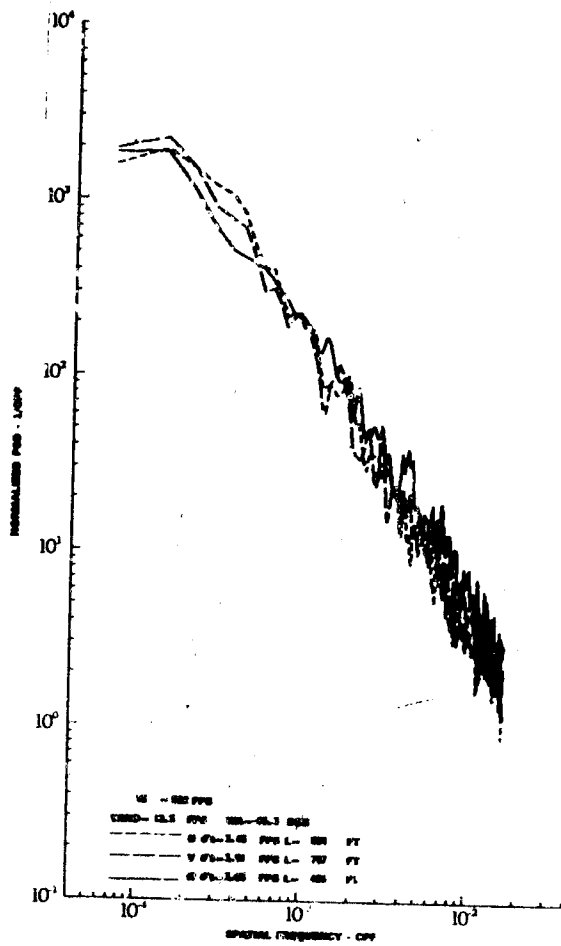
Turbulence Spectra Data For Test 32, Leg 6, Category 112331



Turbulence Spectra Data For Test B2, Log 8, Category 213531



Turbulence Spectra Data for Test 35, Log 1, Category 224331

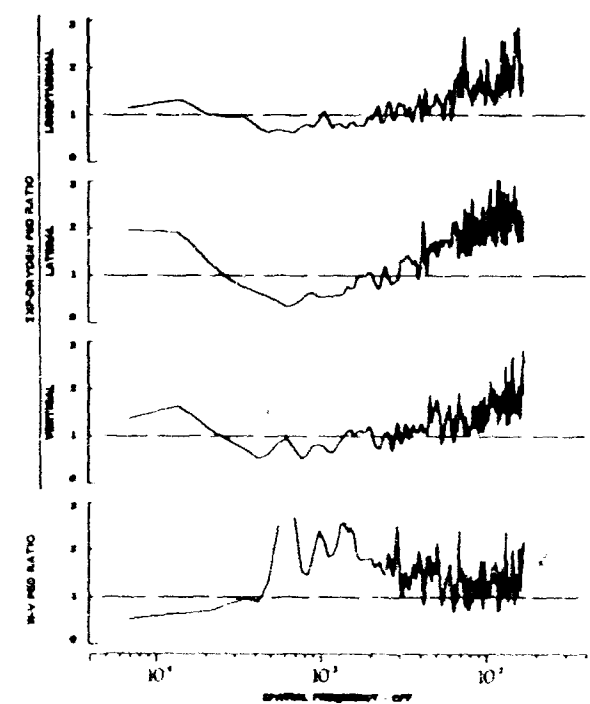
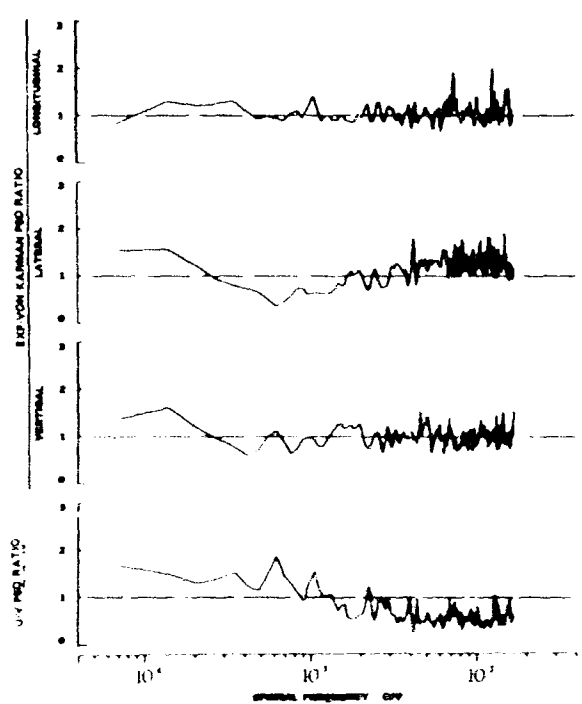
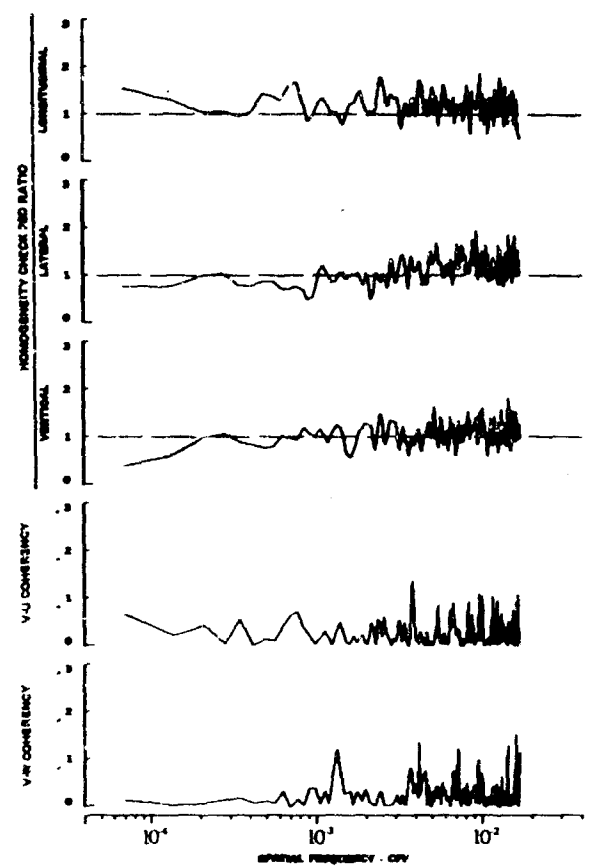
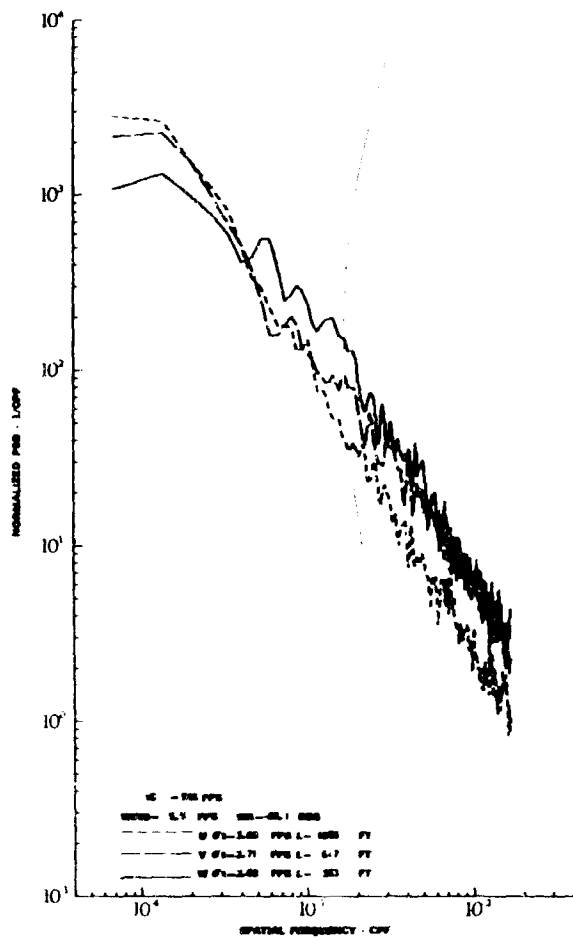


Turbulence Spectra Data for Test 85, Log 5, Category 121331

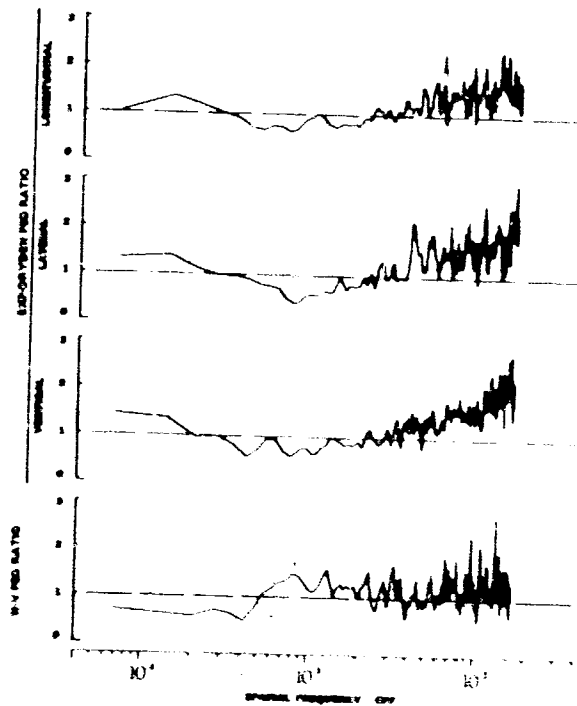
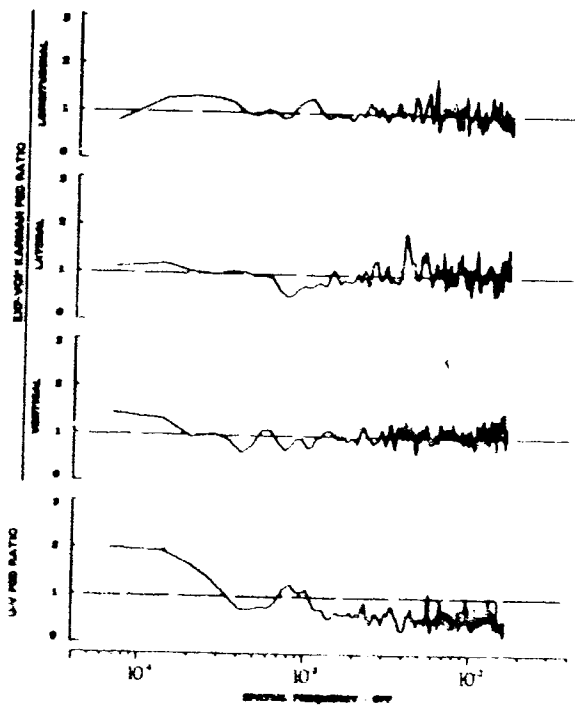
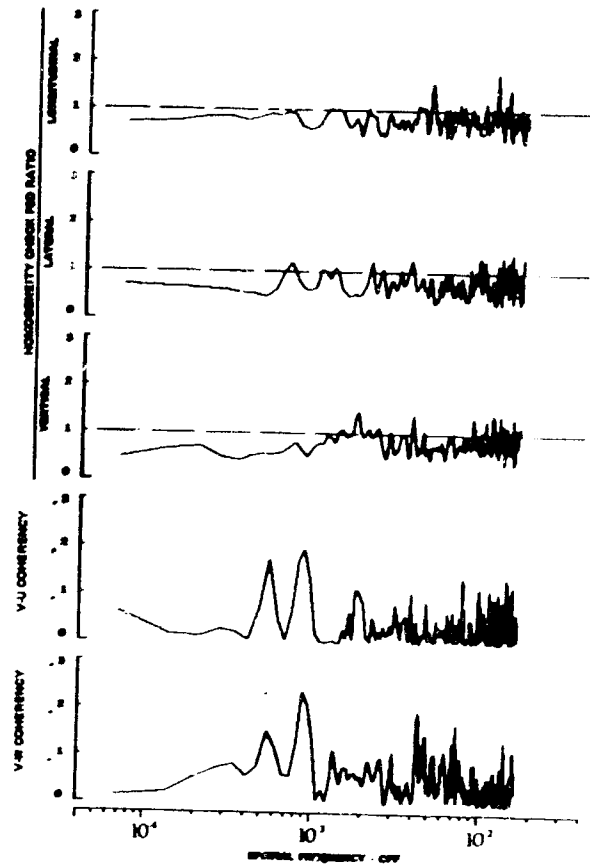
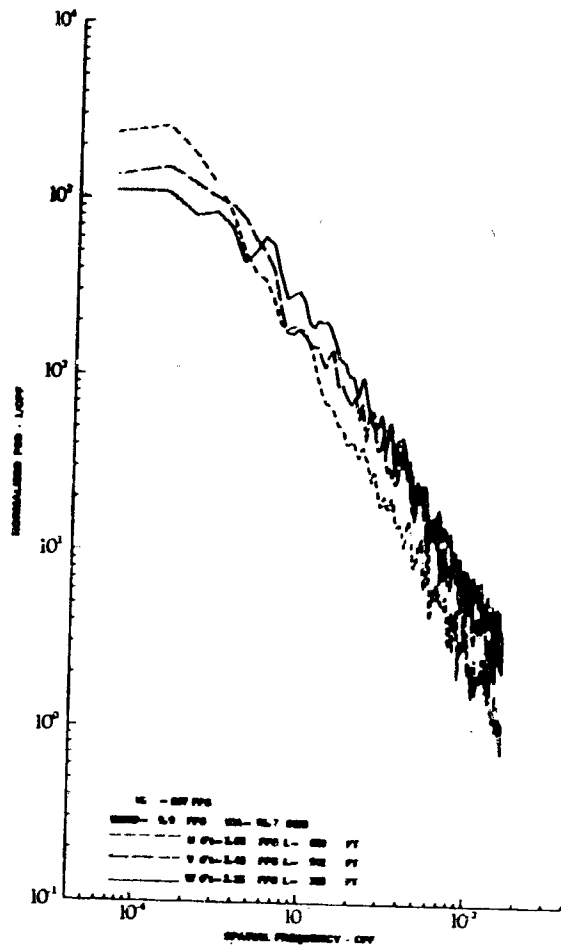




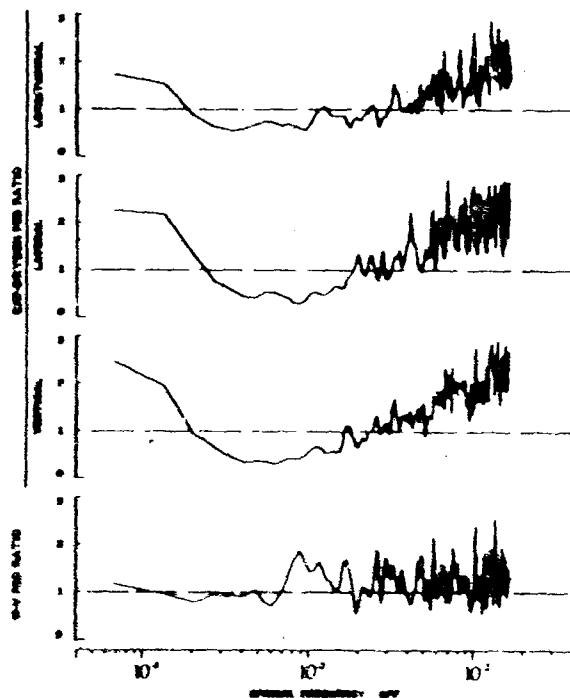
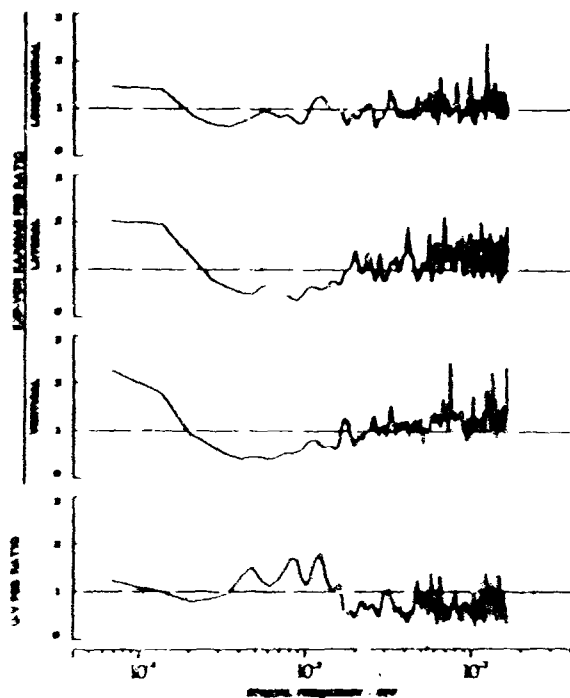
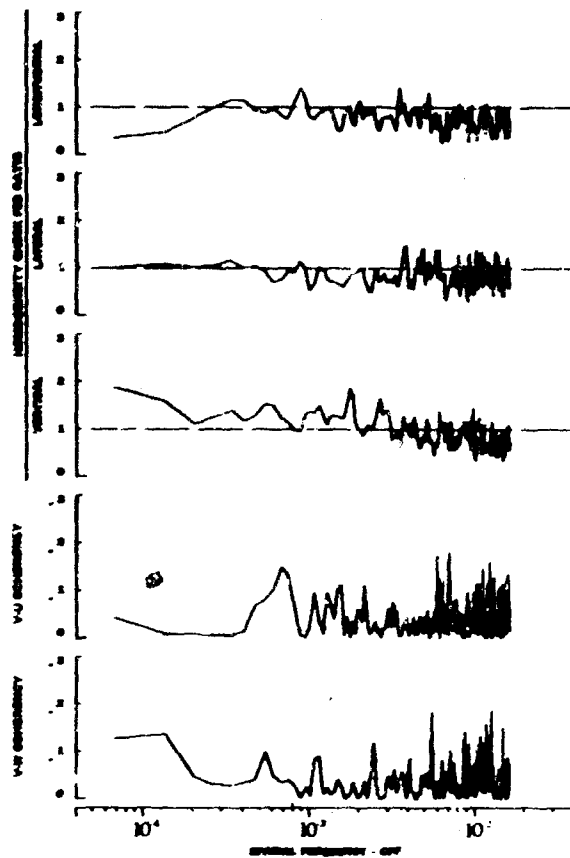
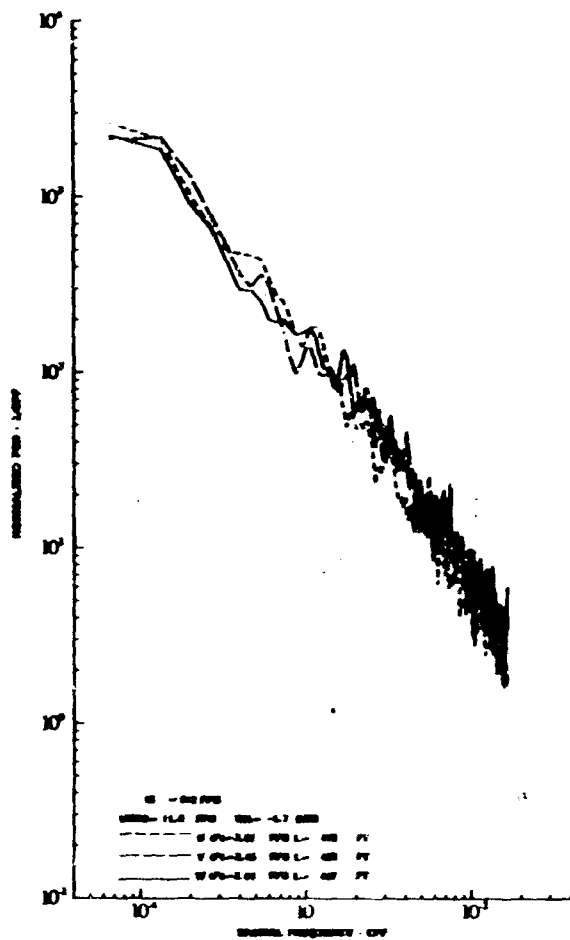




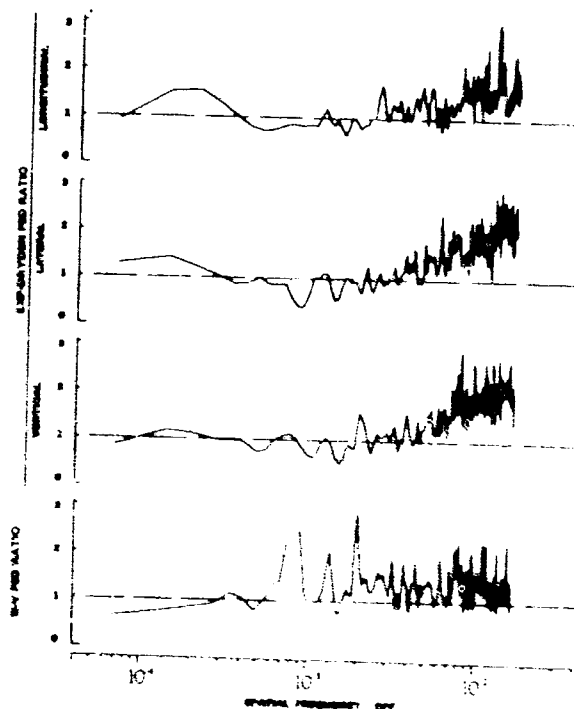
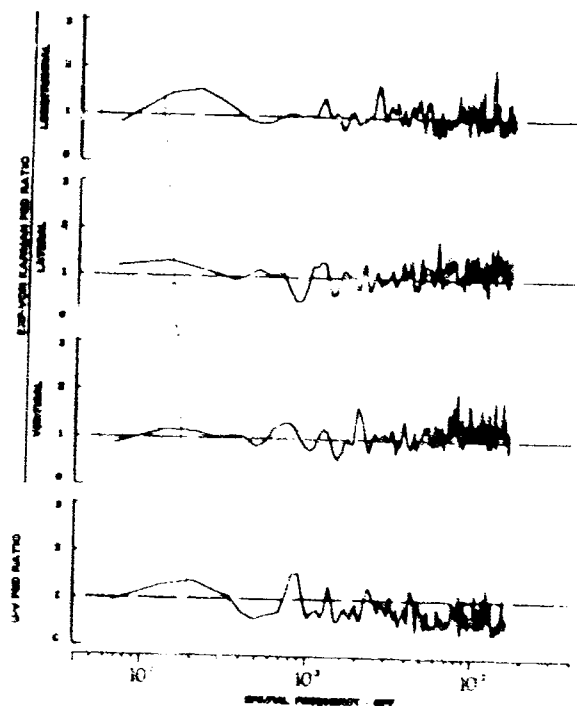
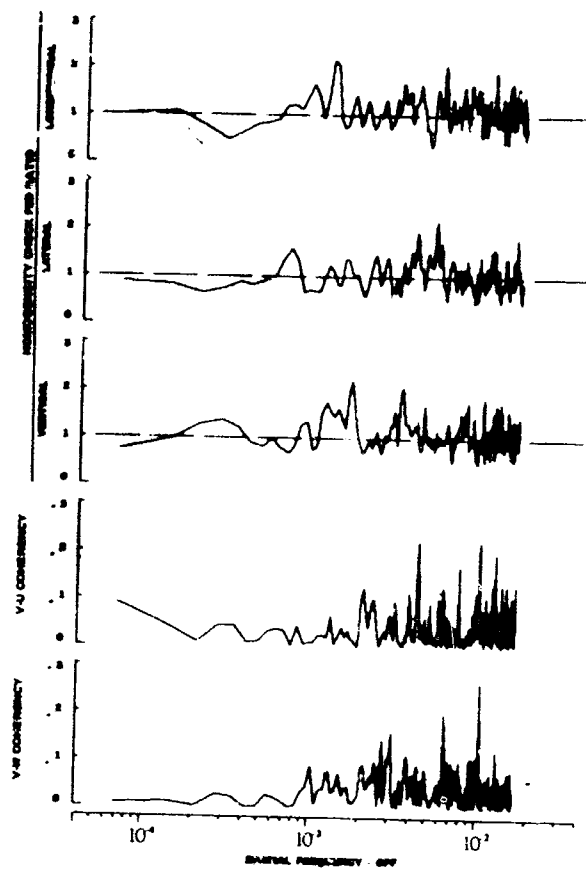
Turbulence Spectra Data For Test 88, Leg 2, Category 312331



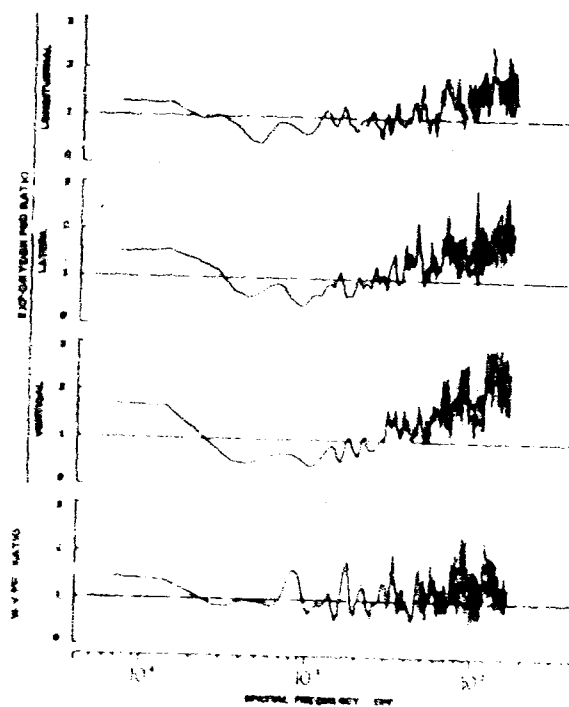
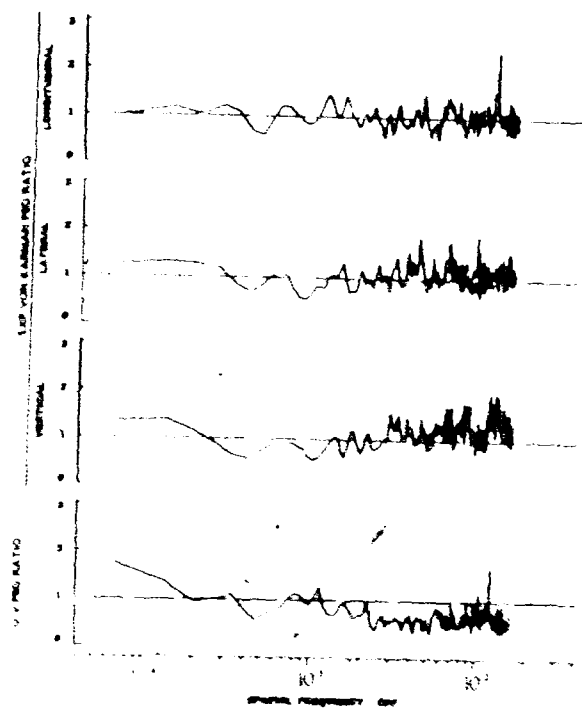
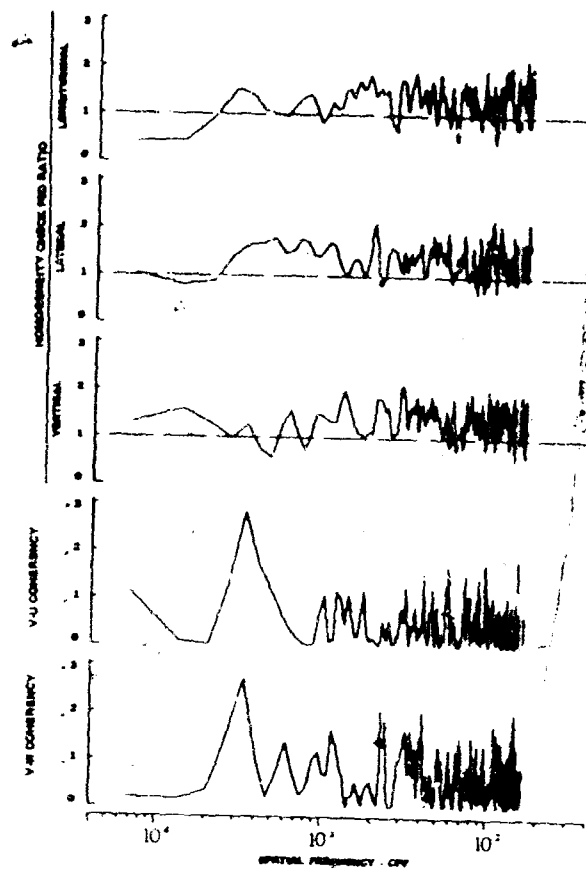
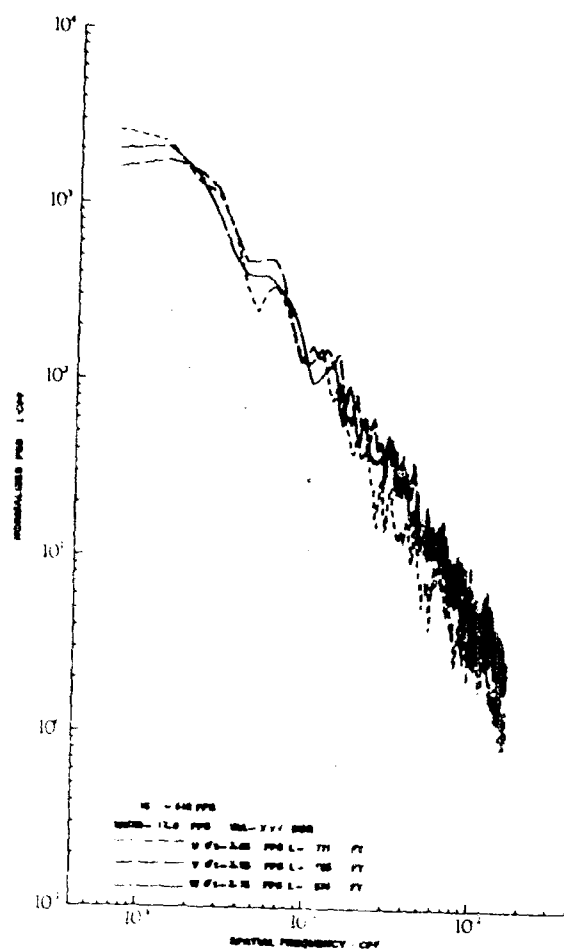
Turbulence Spectra Data For Test 88, Log 6, Category 114331



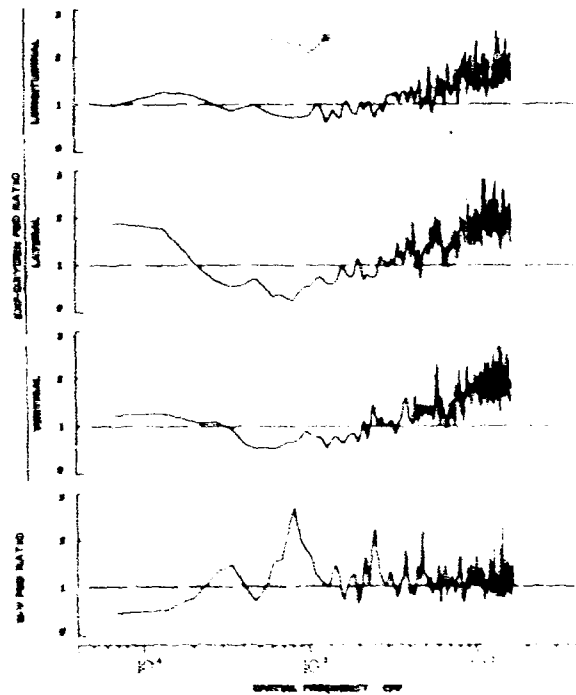
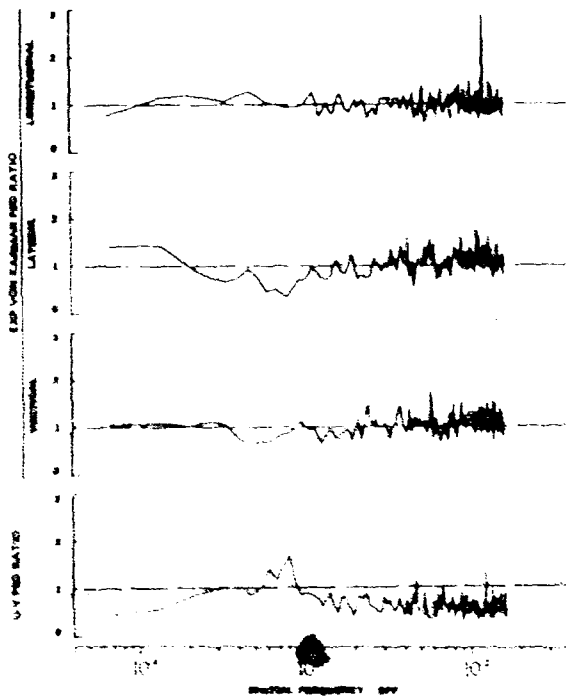
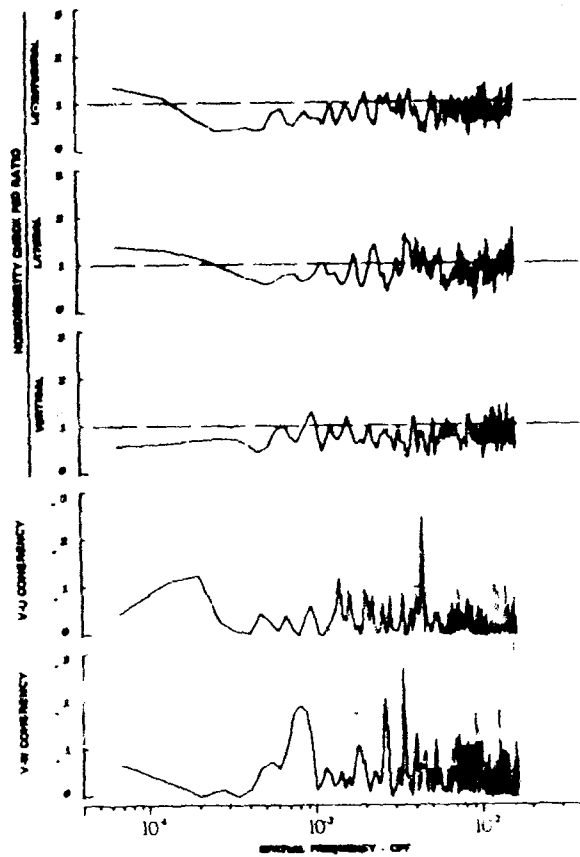
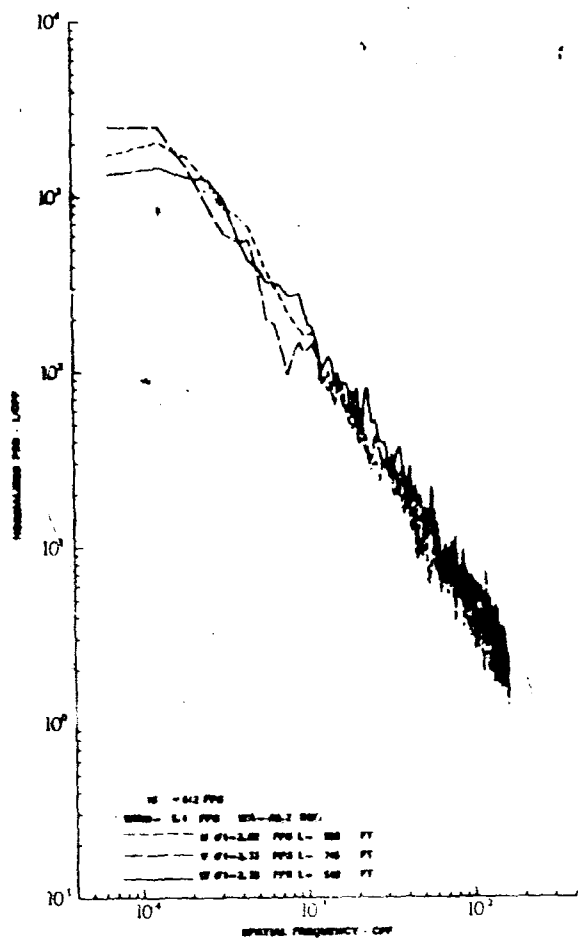
Turbulence Spectra Data for Test 88, Log 8, Category 213331



Turbulence Spectra Data For Test 90, Leg 6, Category 121231



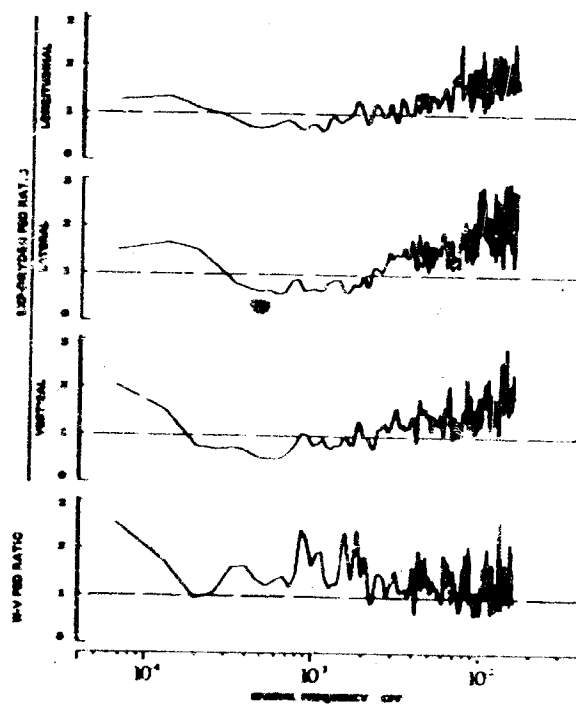
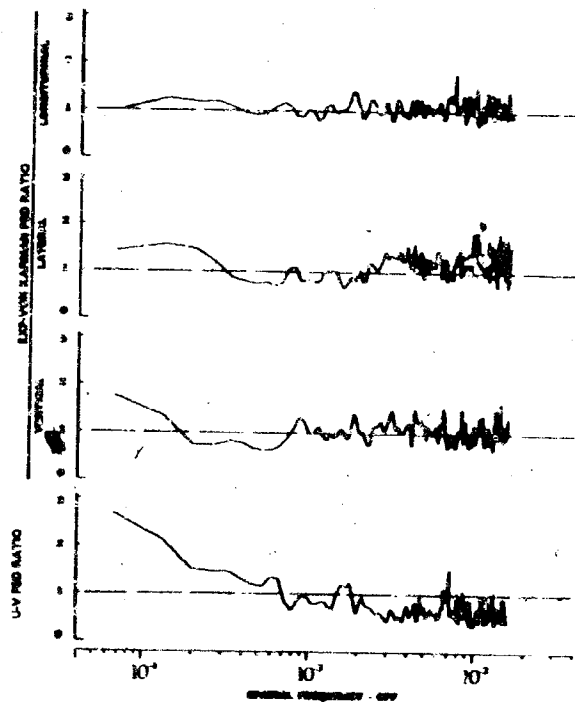
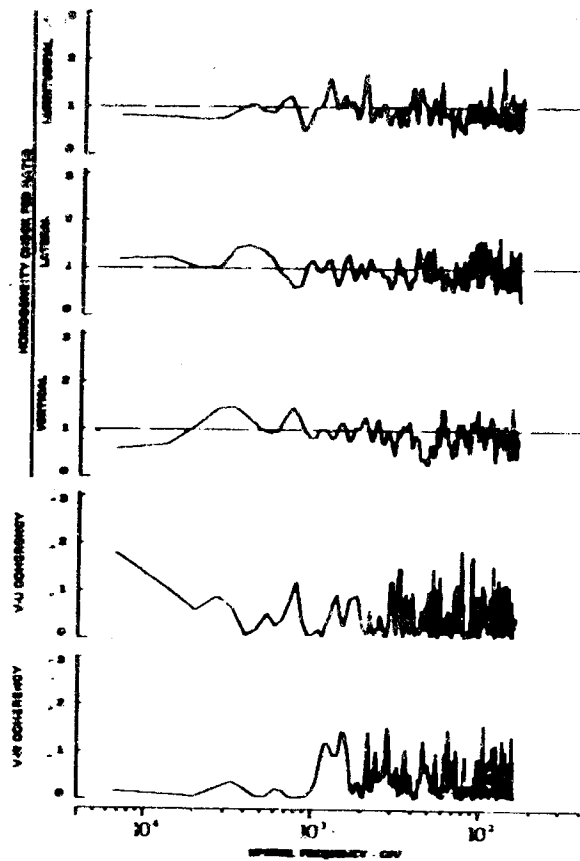
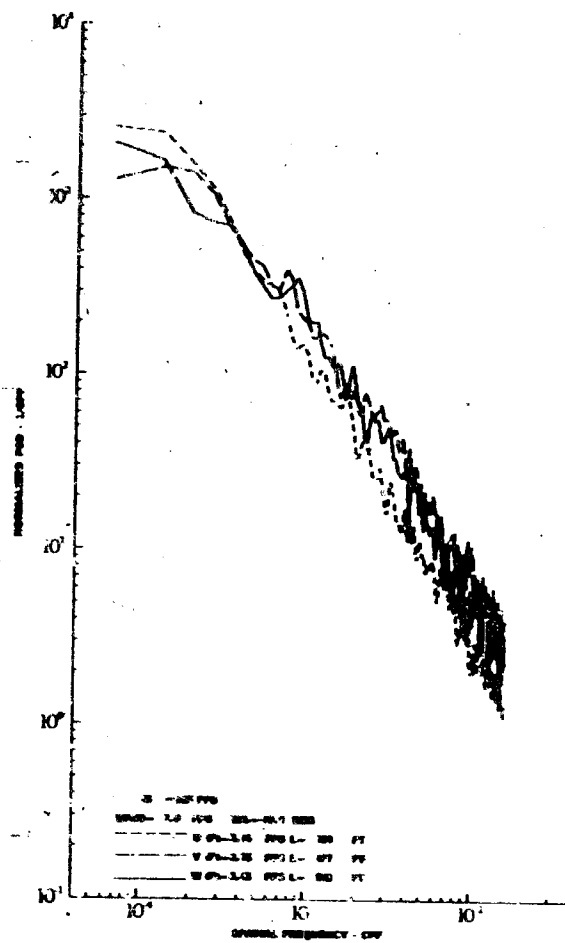
Turbulence Spectra Data For Test 90, Leg 8, Category 222231



Turbulence Spectra Data For Test 94, Log 9, Category 221231

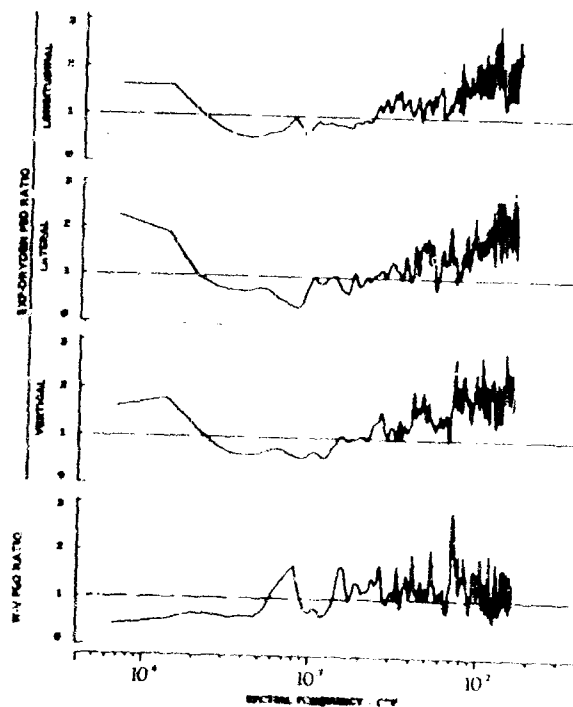
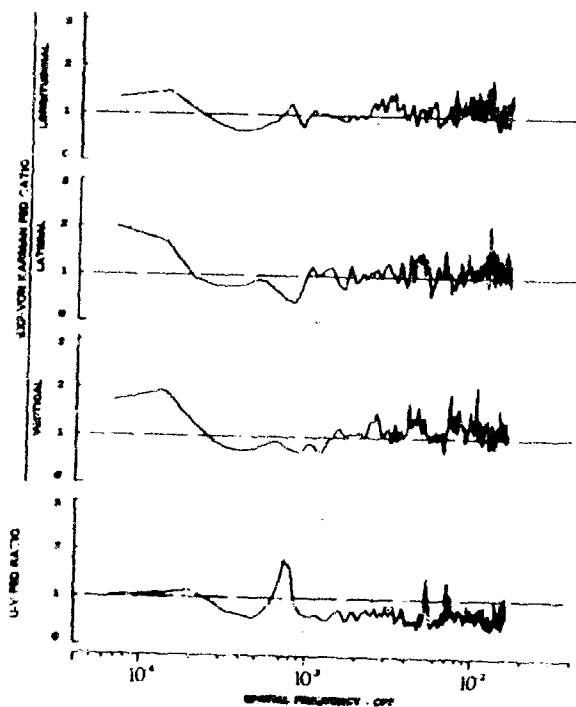
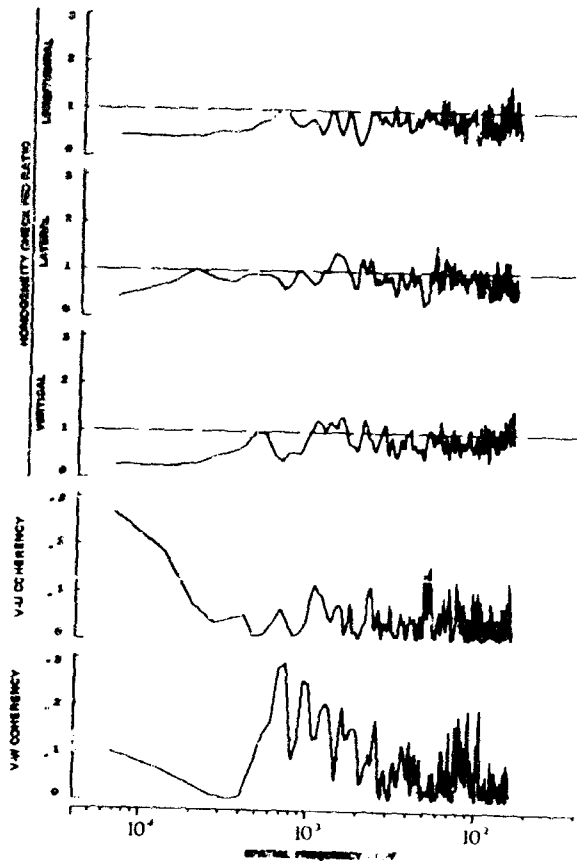
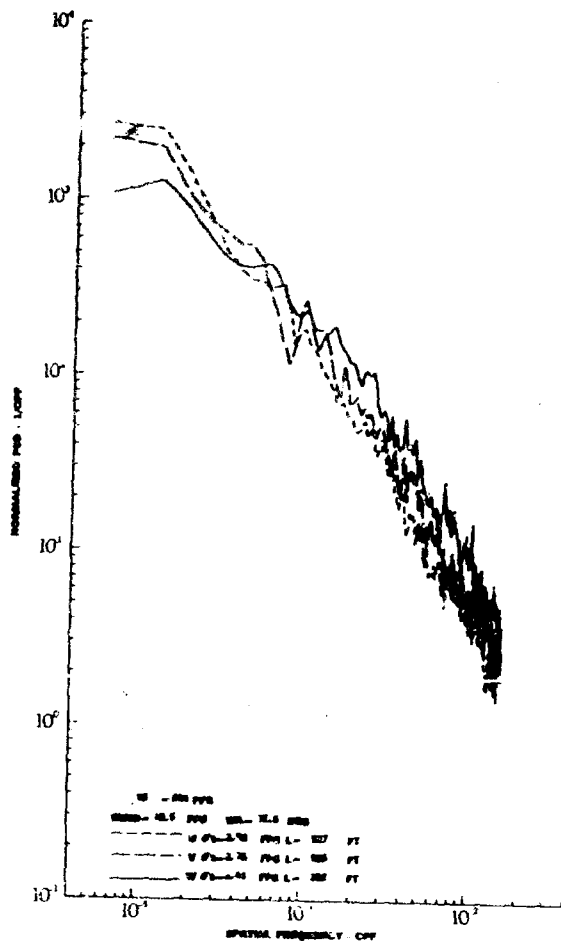




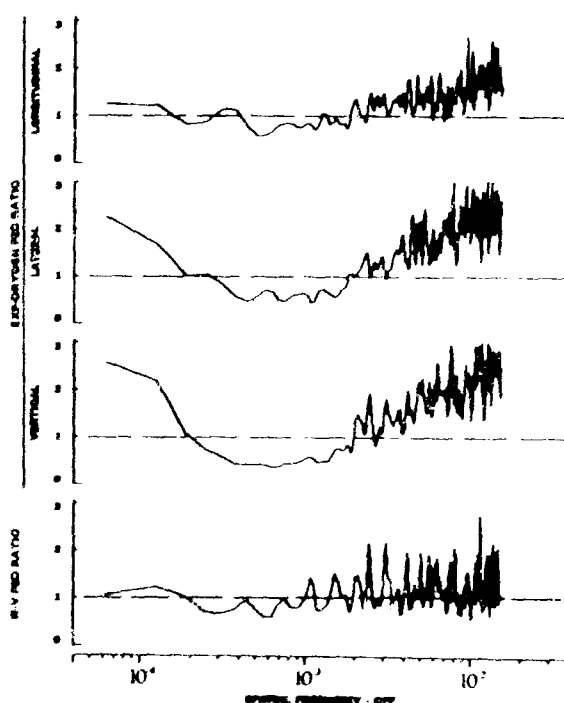
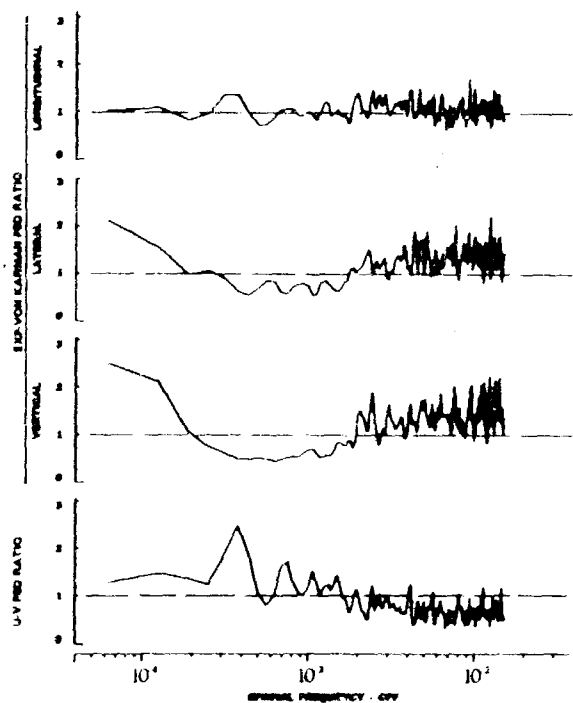
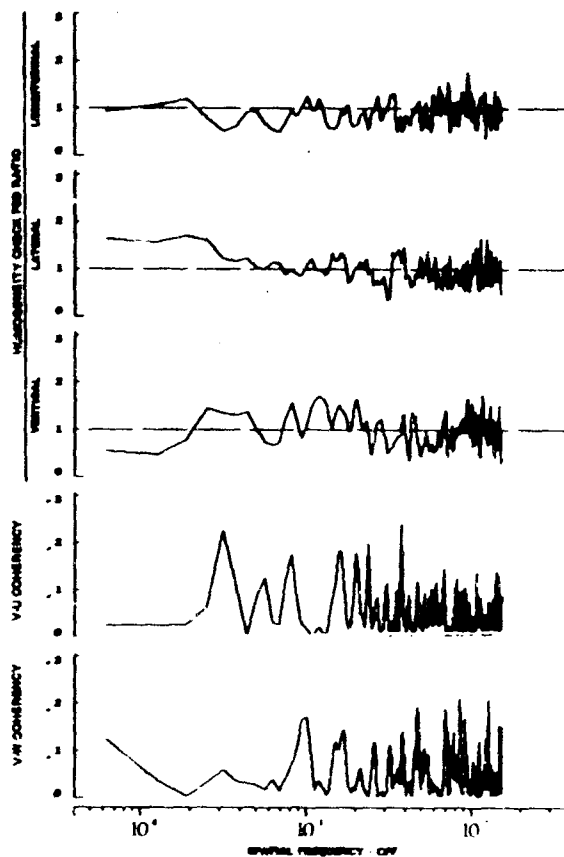
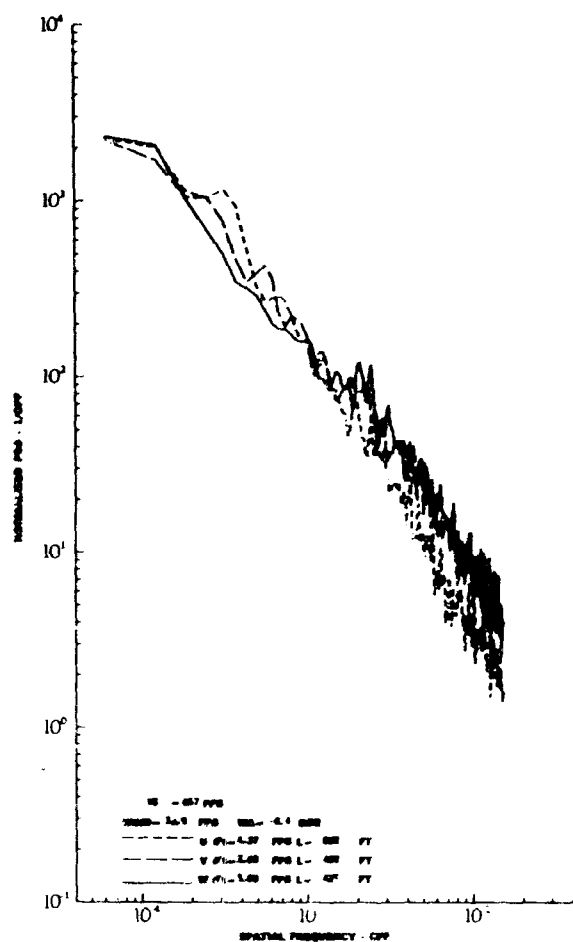


Turbulence Spectra Data For Test 95, Leg 3, Category 122331

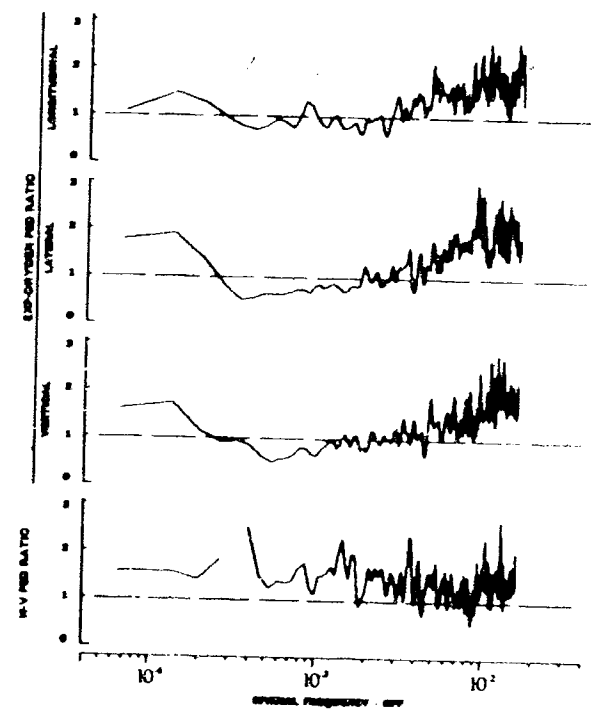
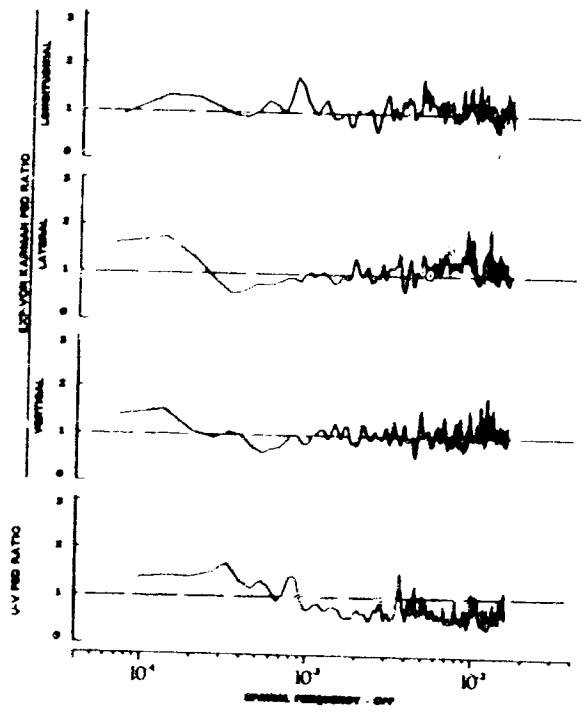
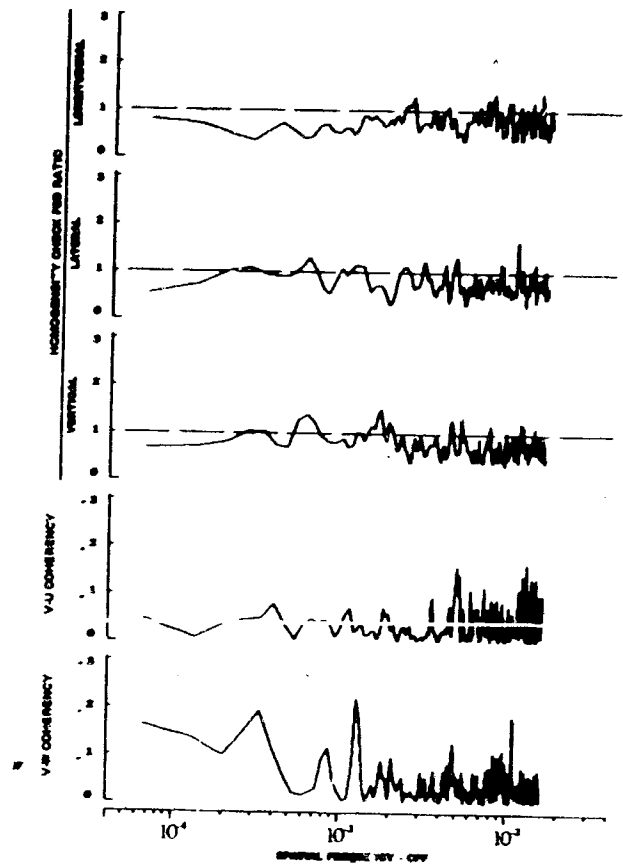
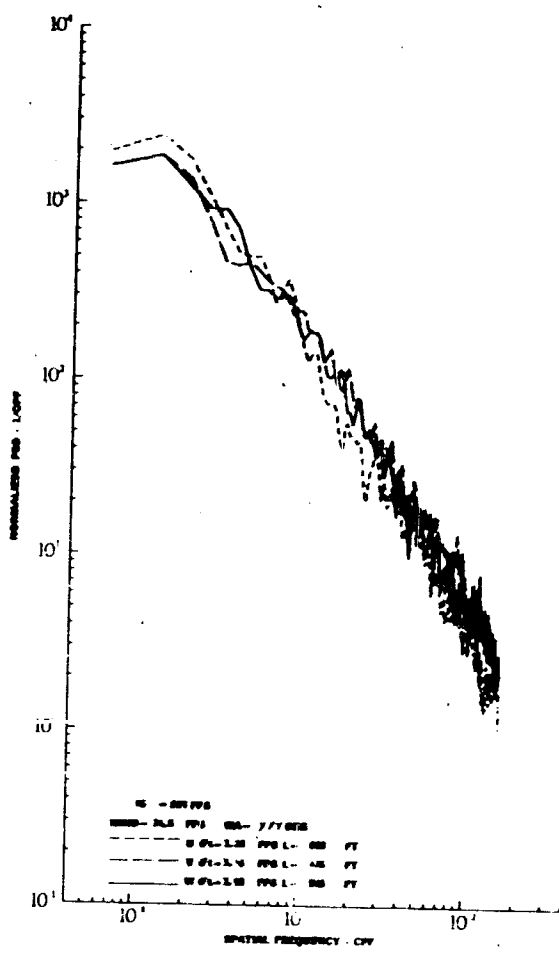




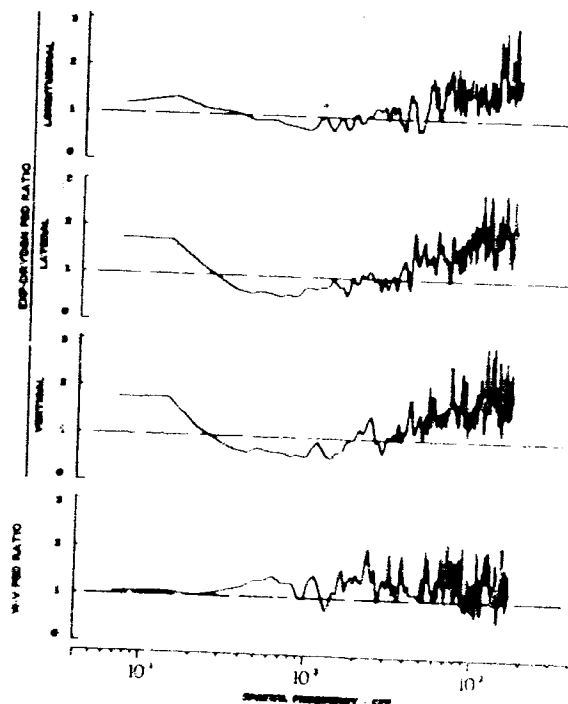
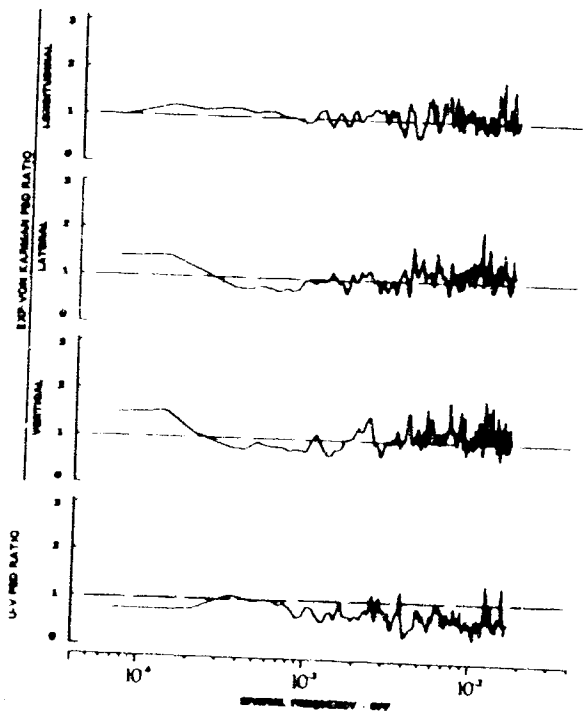
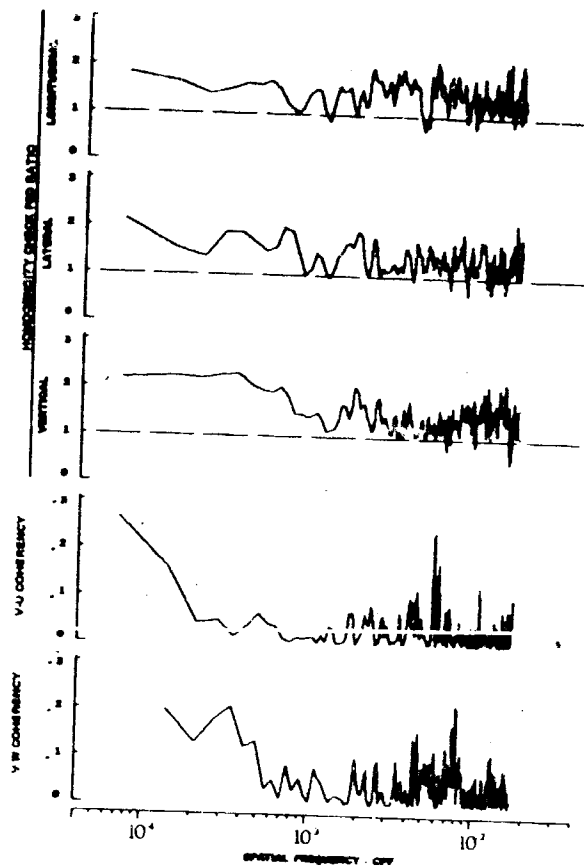
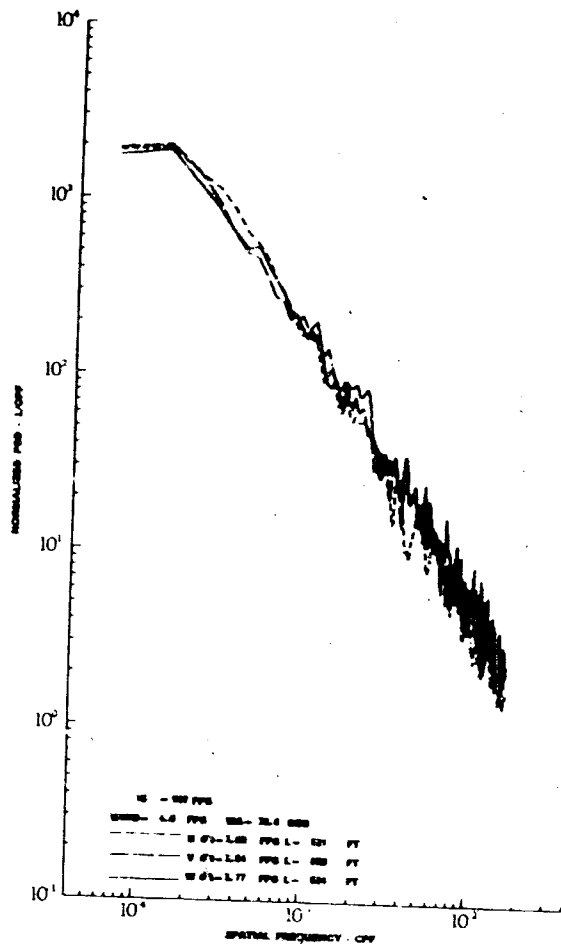
Turbulence Spectra Data For Test 98, Leg 6, Category 212331



Turbulence Spectra Data For Test 98, Leg 8, Category 214331



Turbulence Spectra Data For Test 101, Leg 1, Category 224331



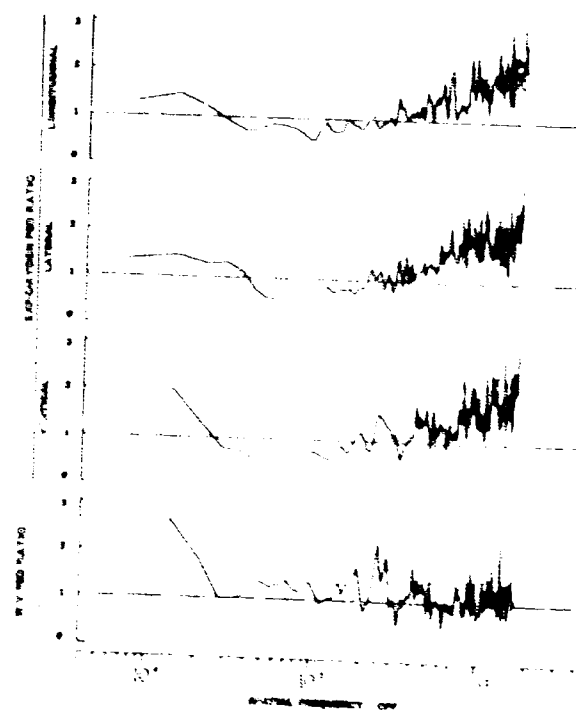
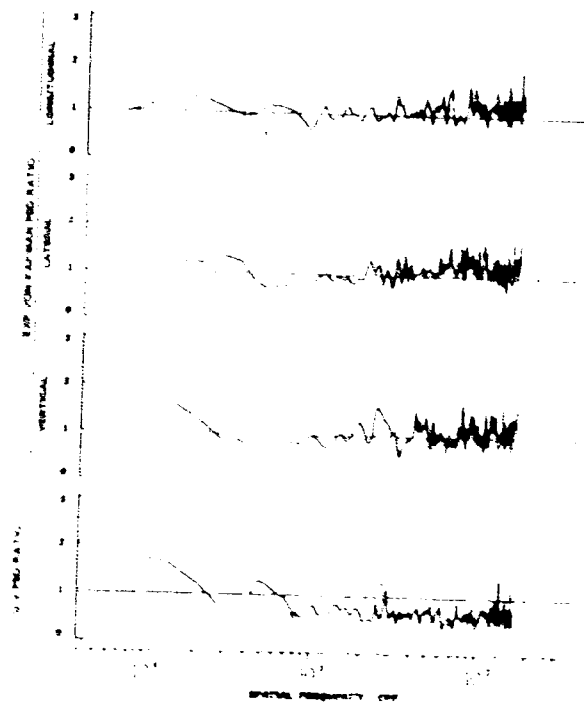
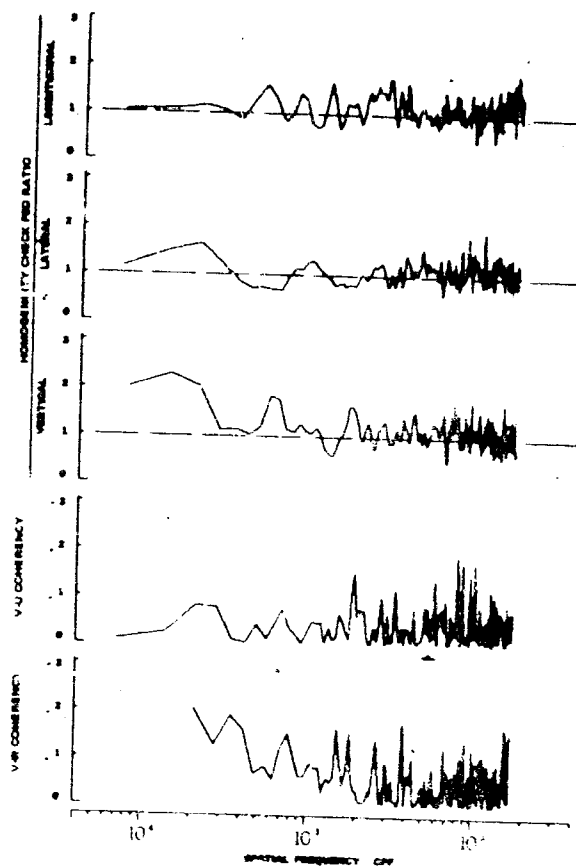
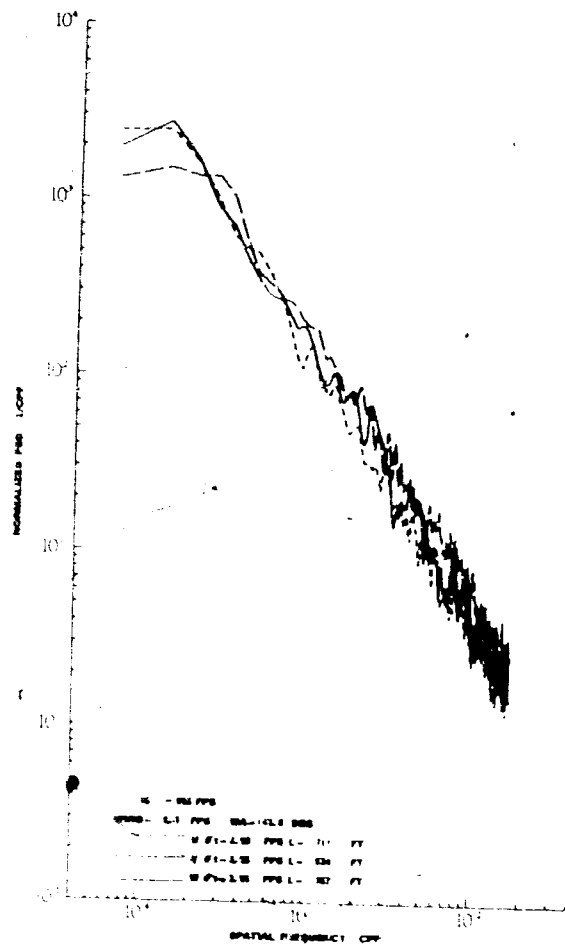
Turbulence Spectra Data For Test 101, Leg 5, Category 122331



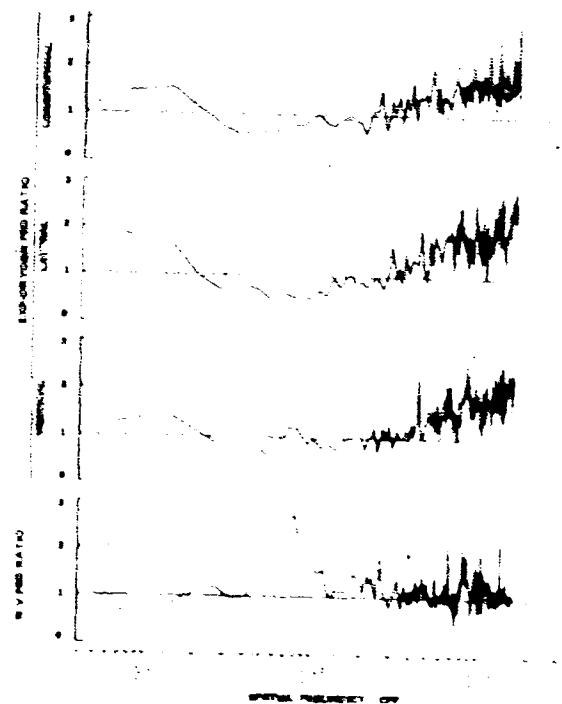
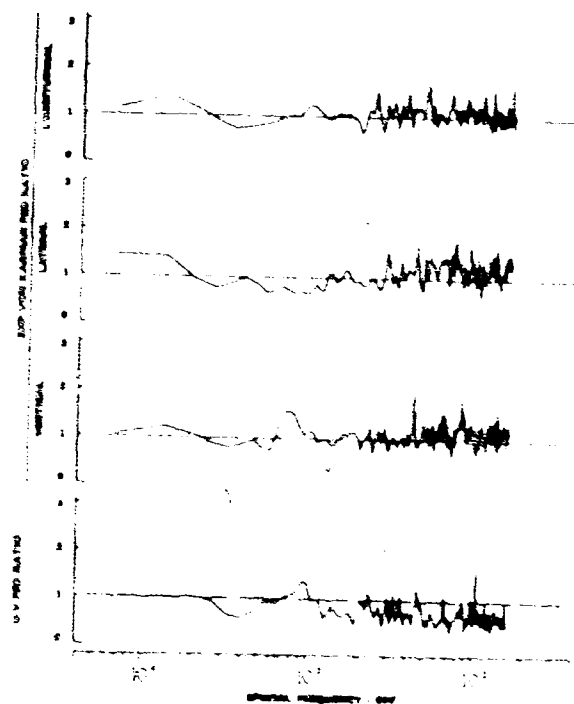
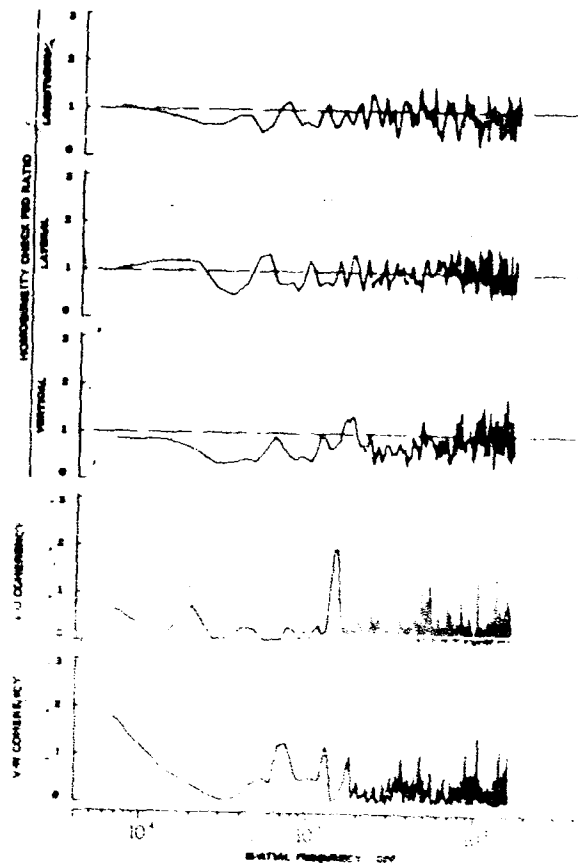




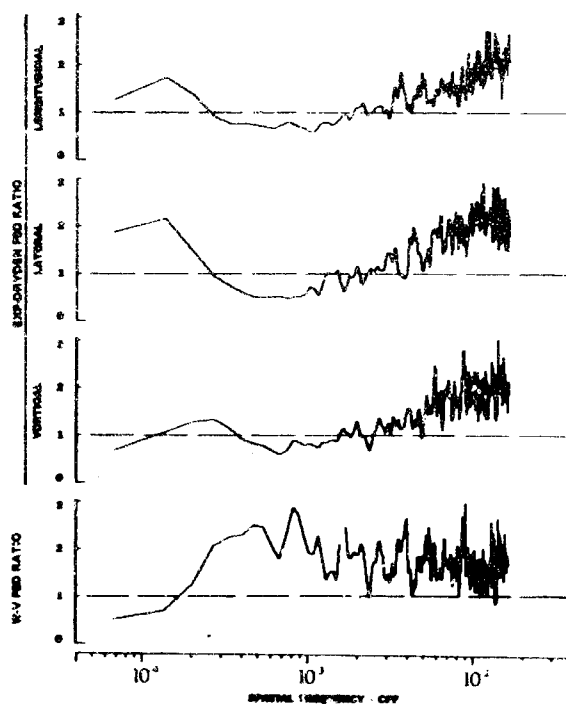
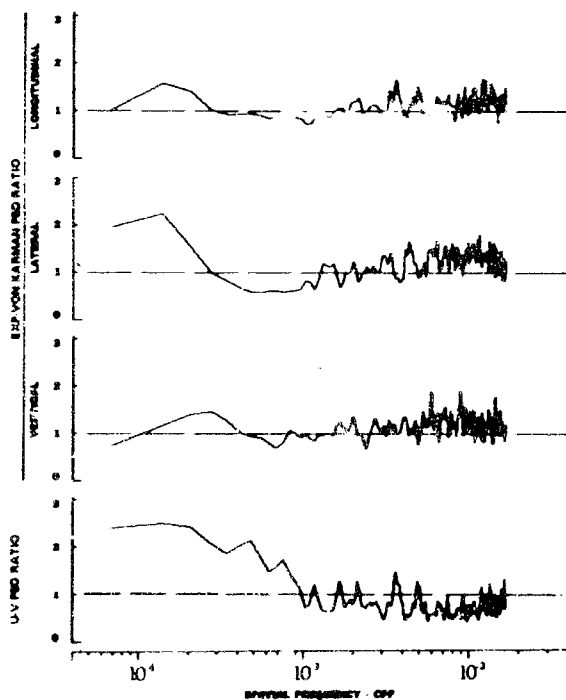
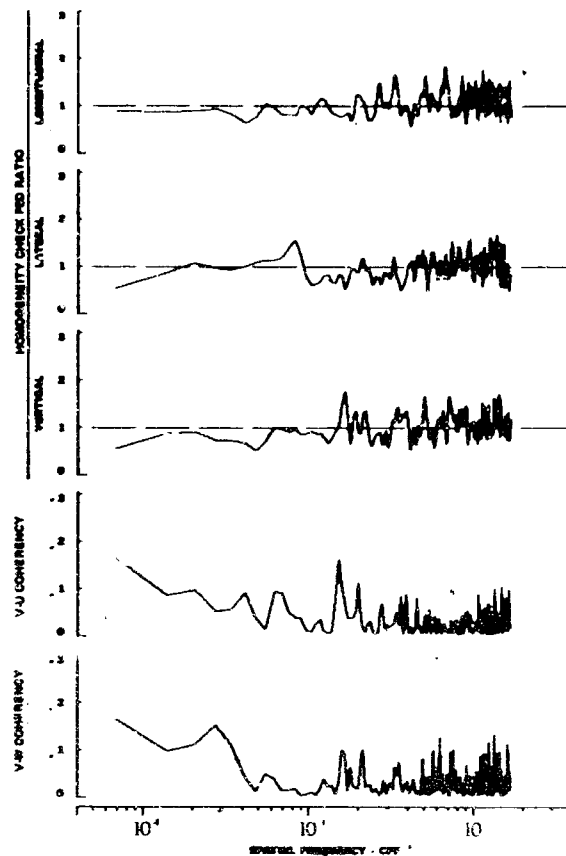
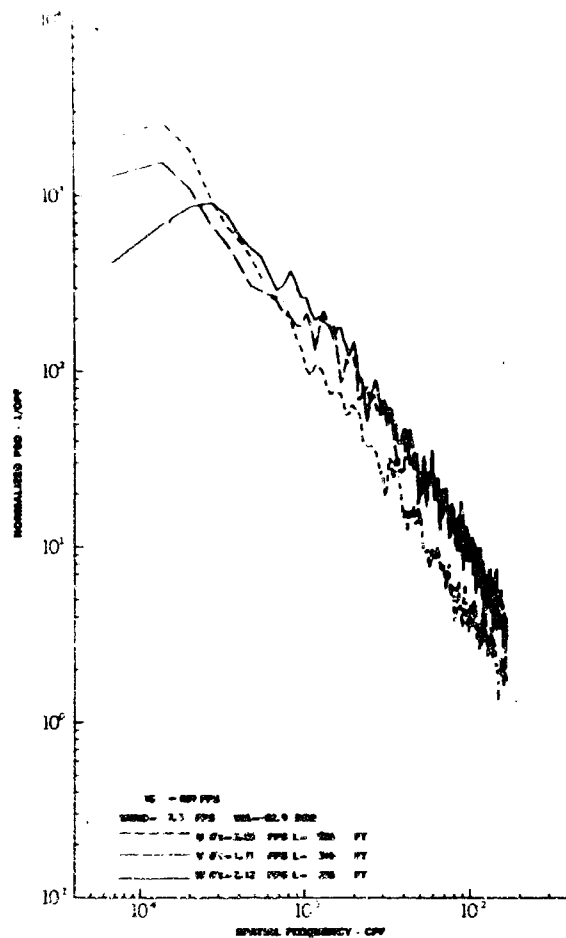




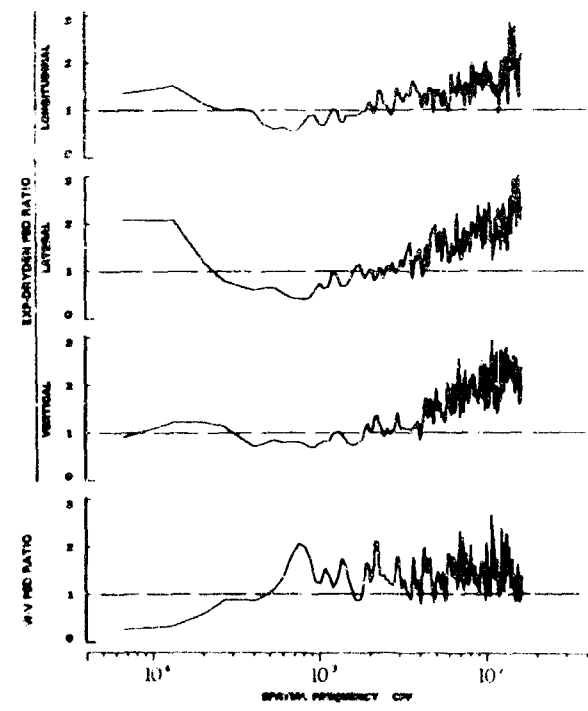
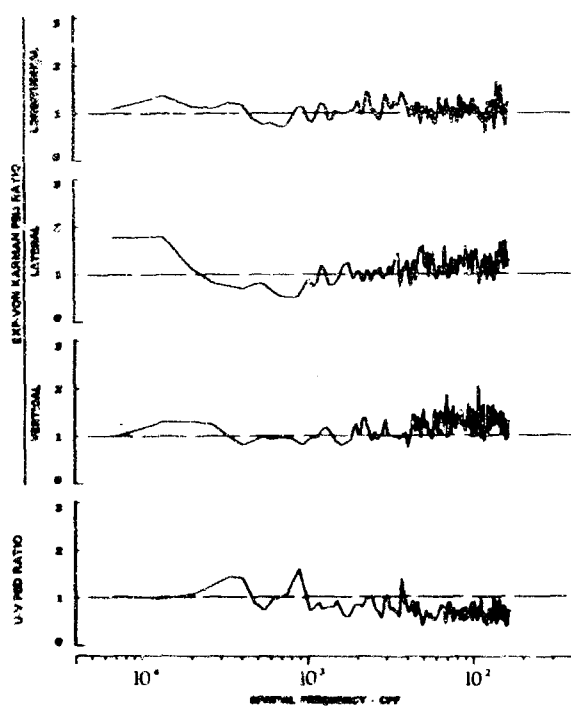
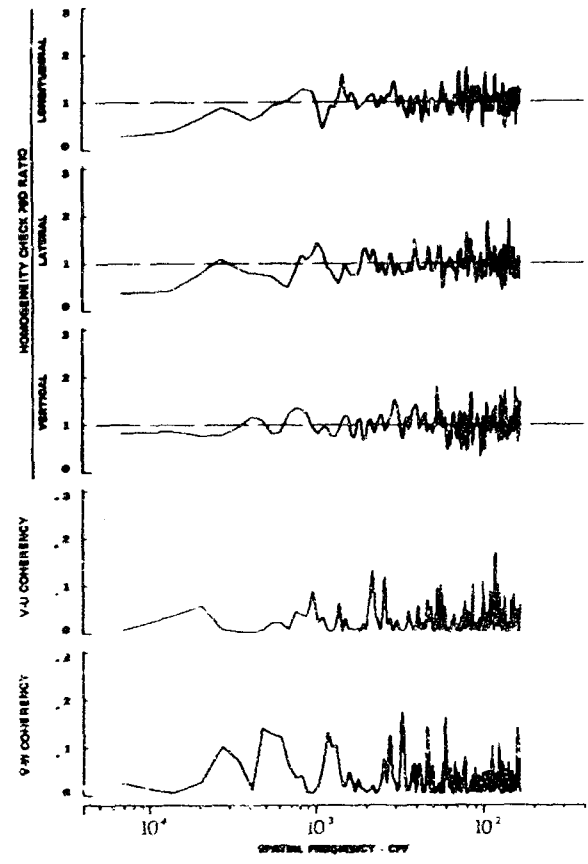
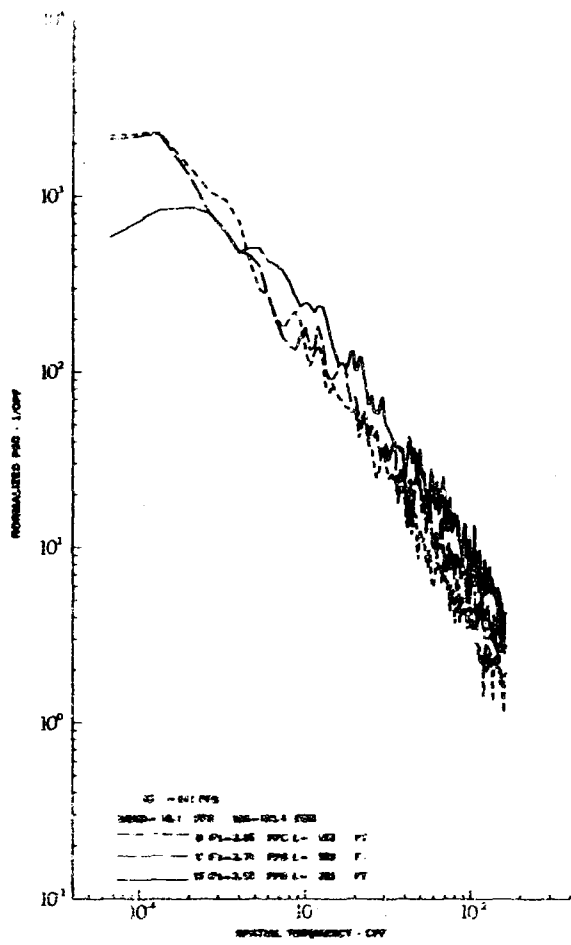
Turbulence Spectra Data For Test 107, Leg 5, Category 123171



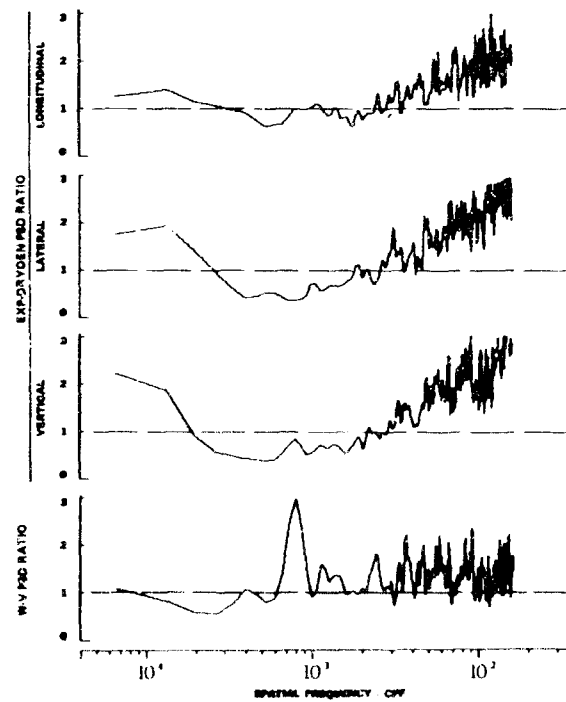
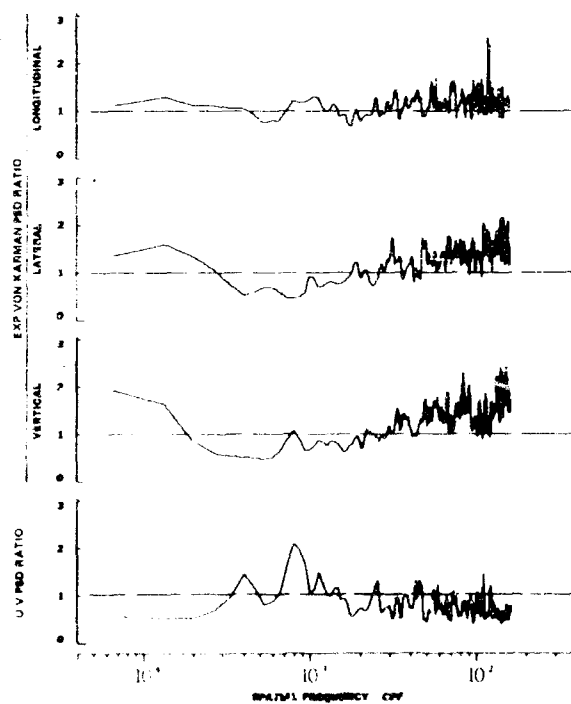
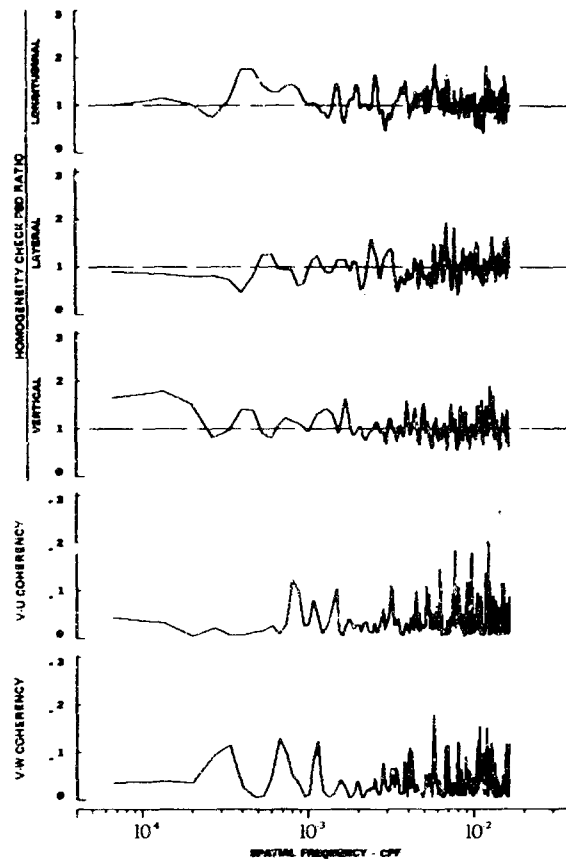
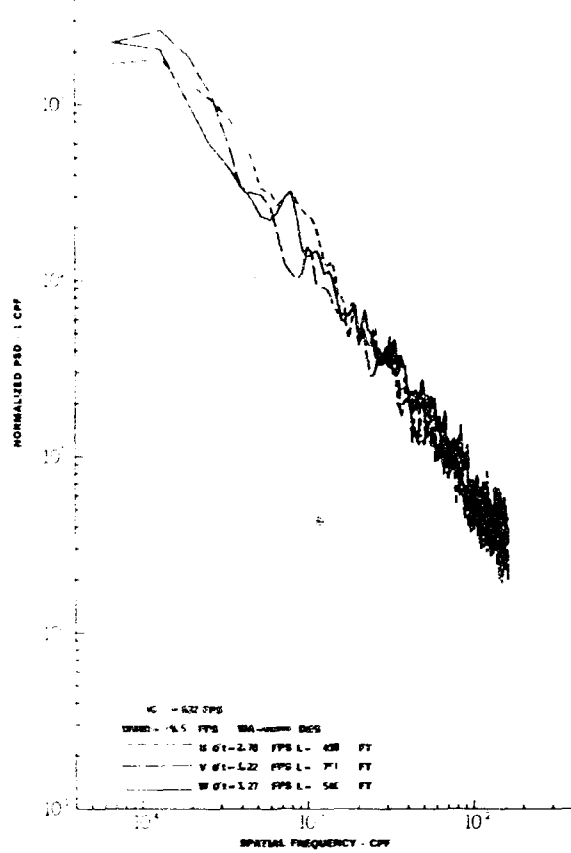
Turbulence Spectra Data For Test 107, Leg 7, Category 322331



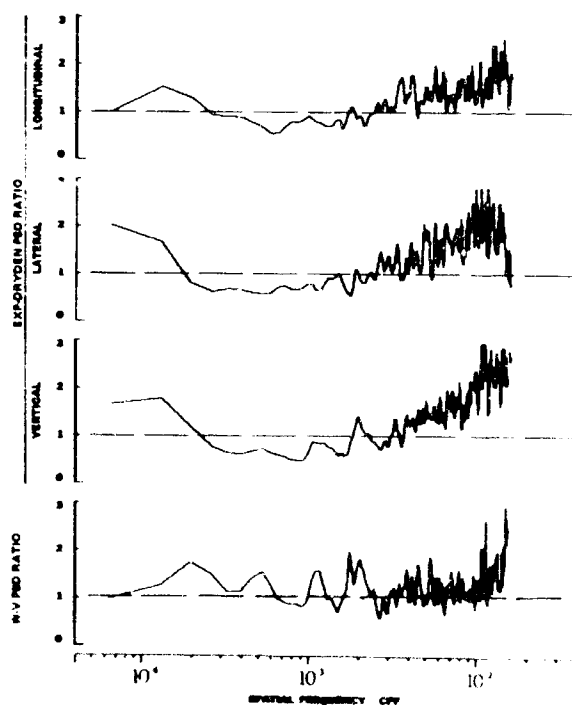
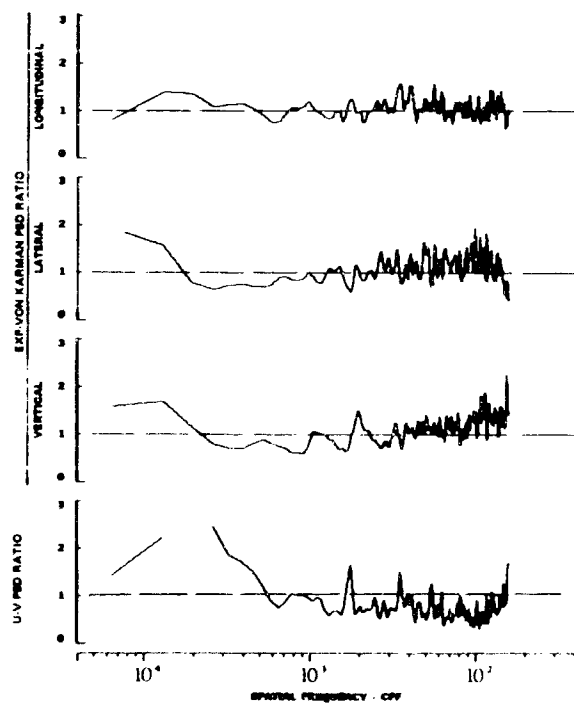
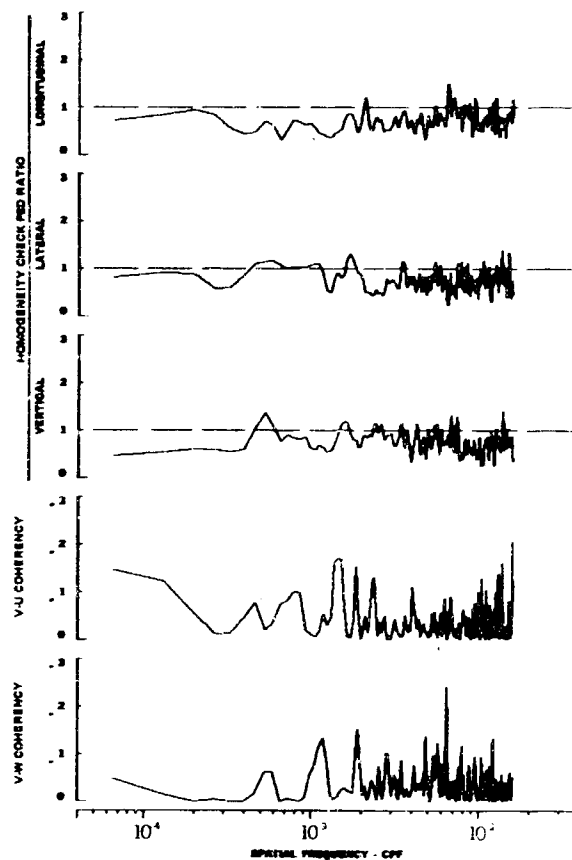
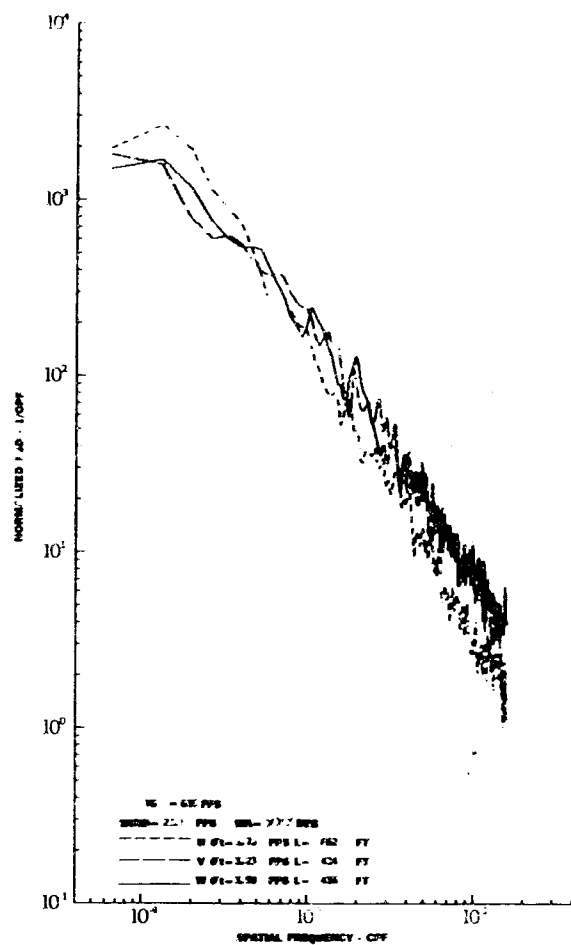
Turbulence Spectra Data For Test 108, Leg 2, Category 312231



Turbulence Spectra Data for Test 106, Leg 6, Category 213231

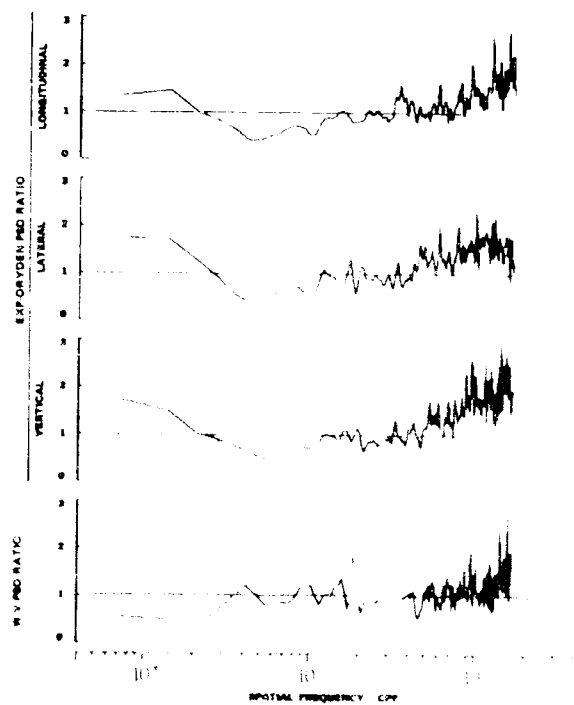
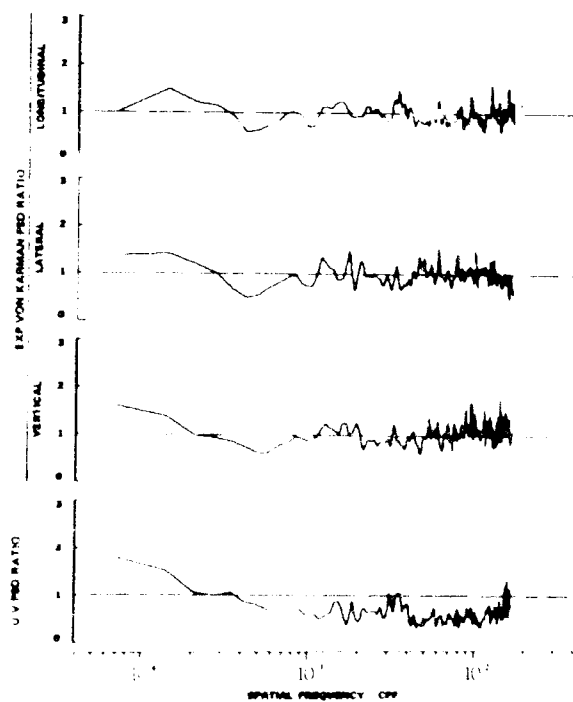
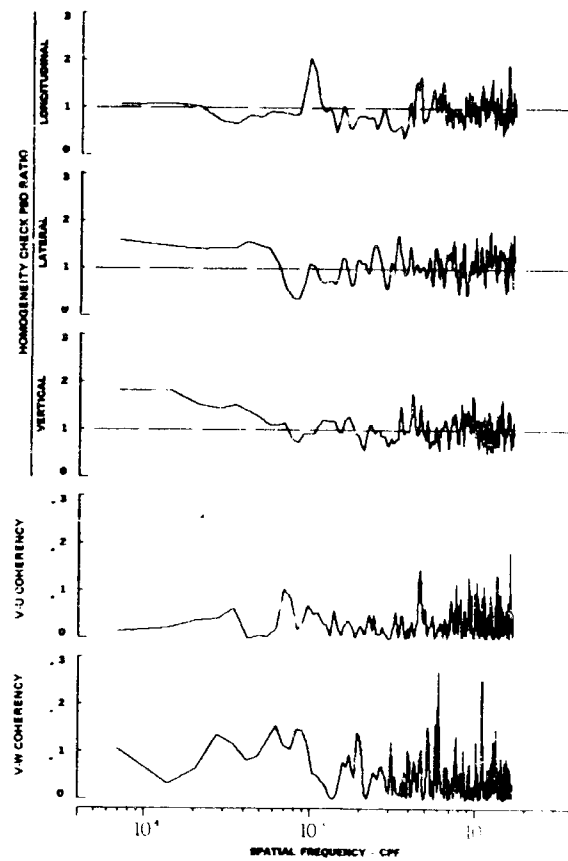
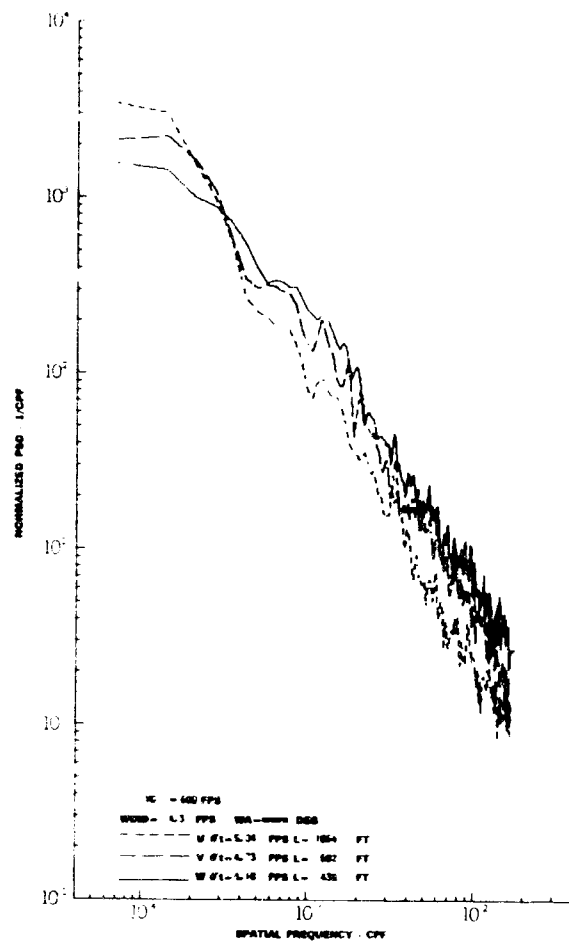


Turbulence Spectra Data For Test 108, Leg 8, Category 212231

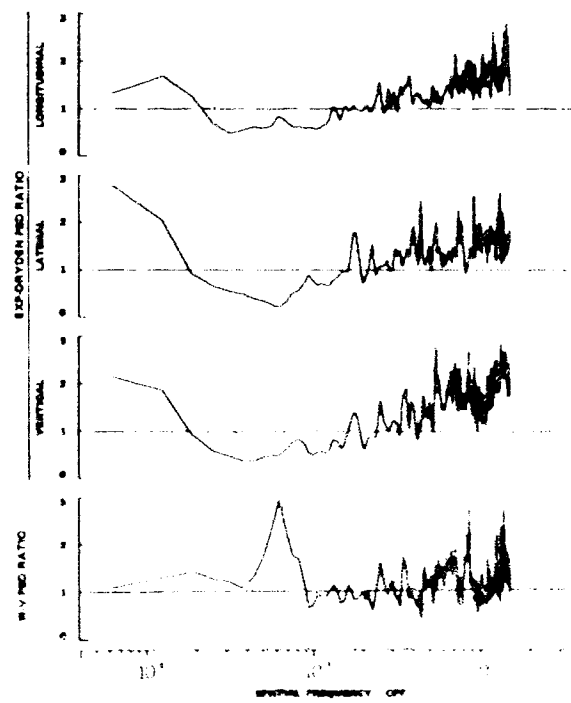
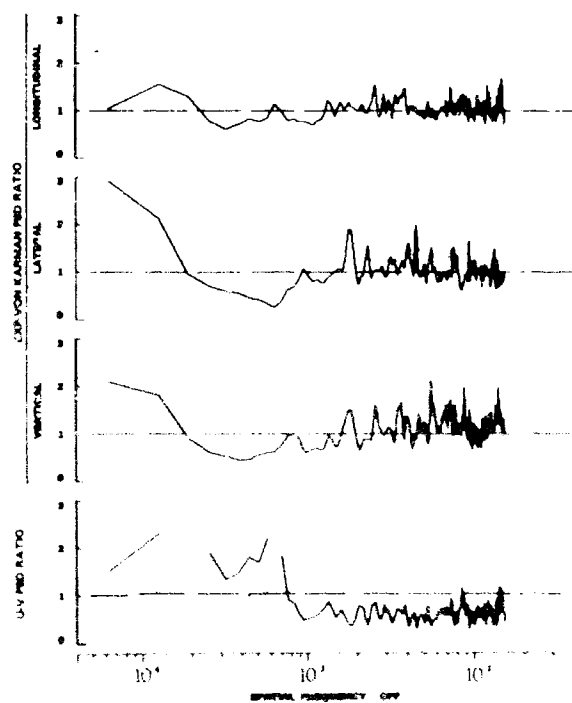
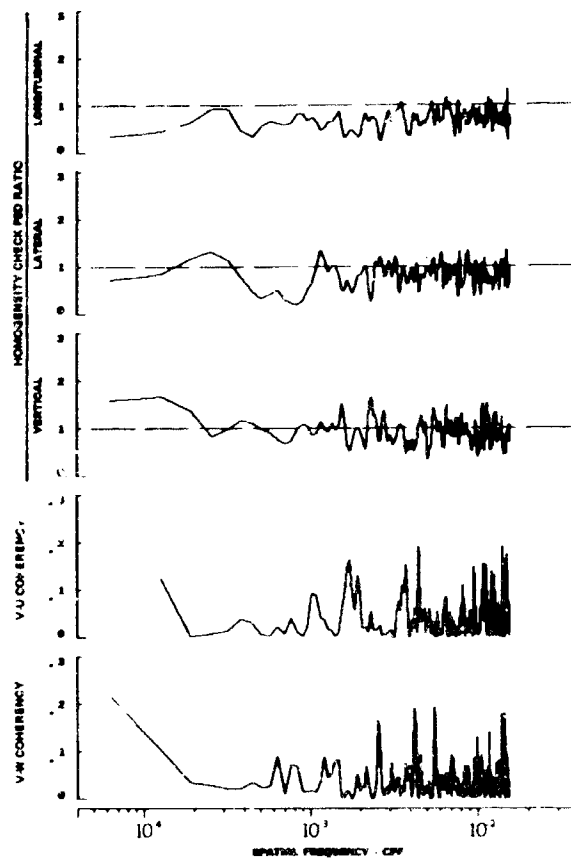
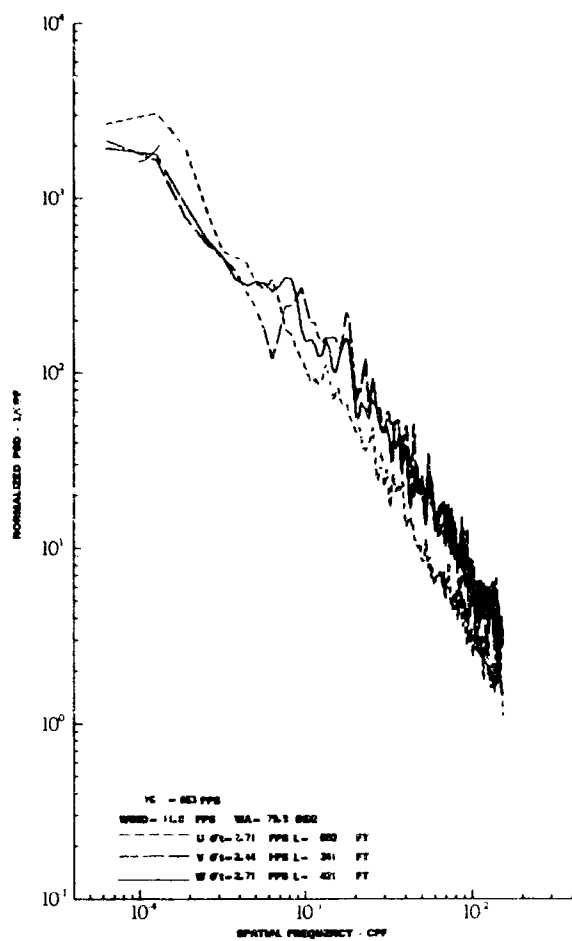


Turbulence Spectra Data For Test 109, Leg 1, Category 214331

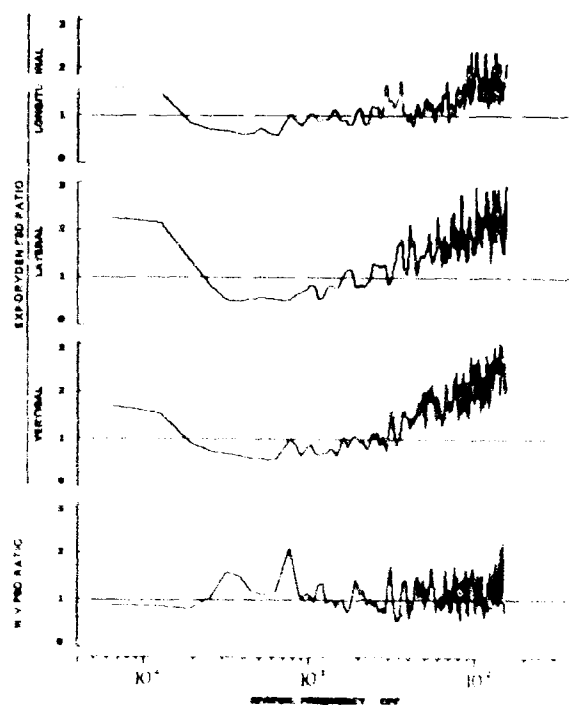
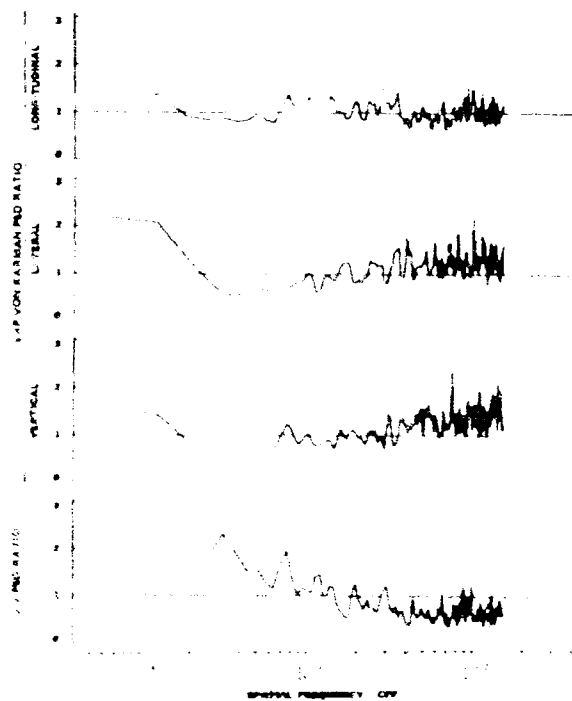
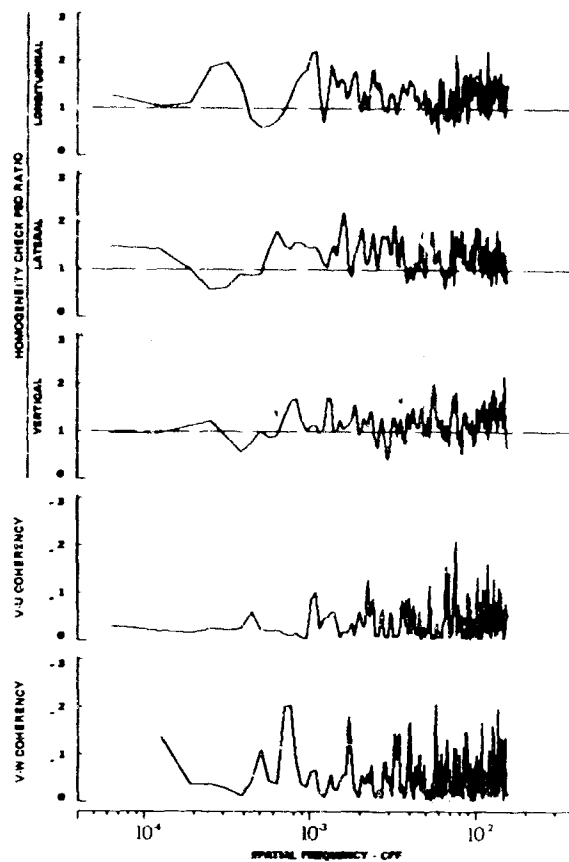
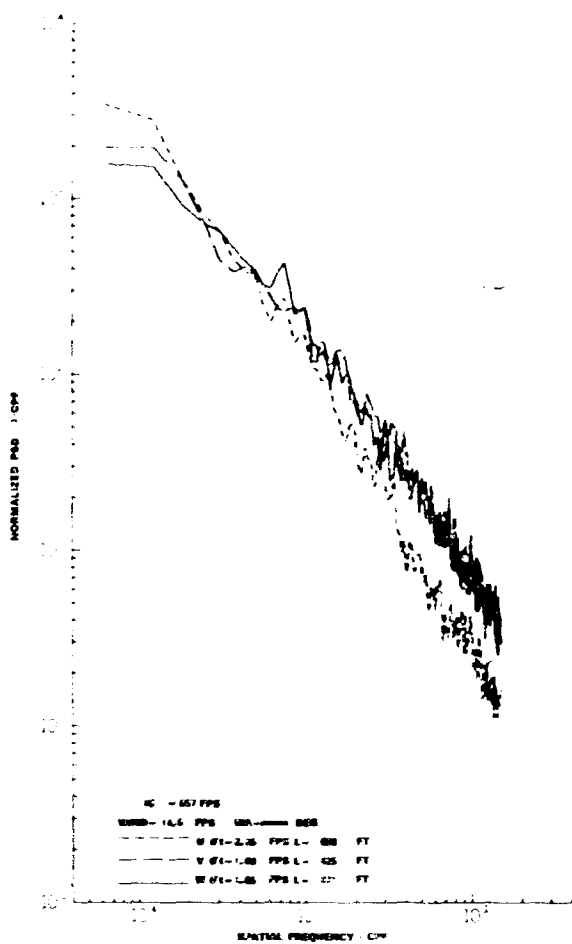




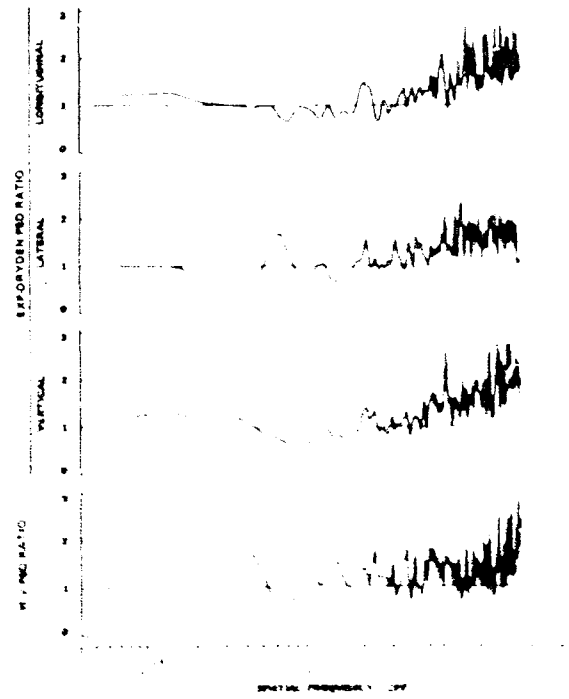
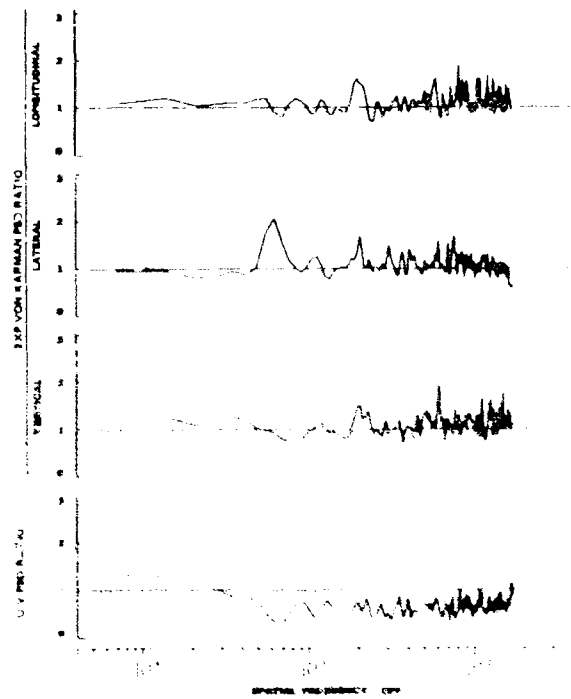
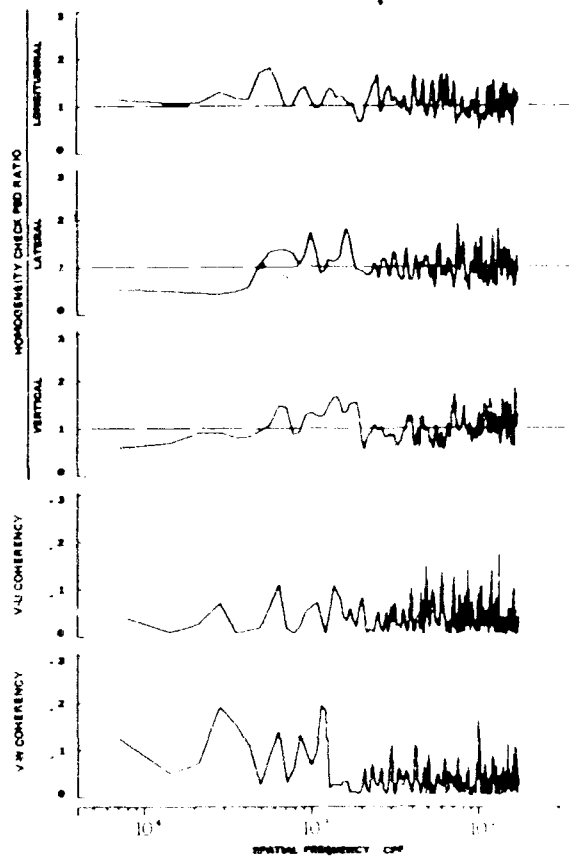
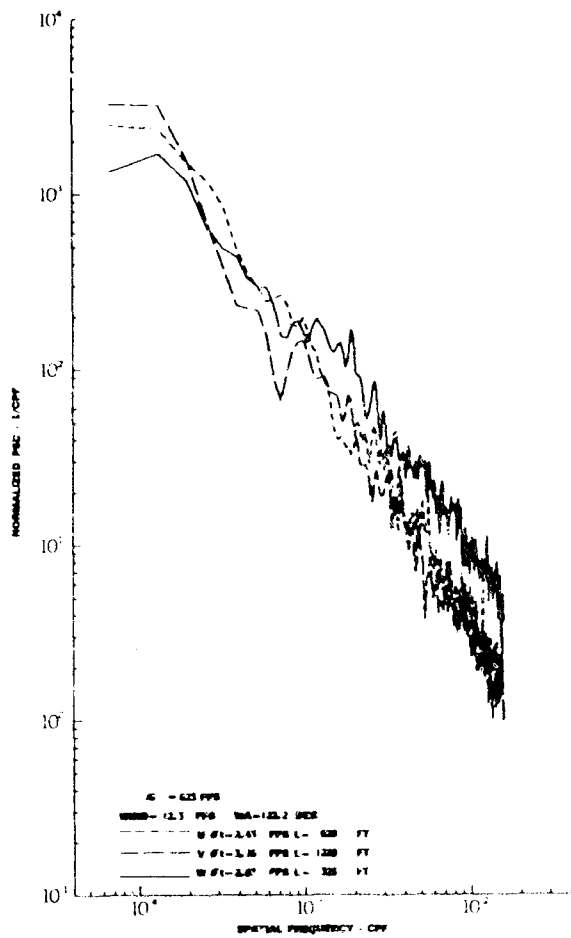
Turbulence Spectra Data For Test 109, Leg 5, Category 112331



Turbulence Spectra Data For Test 109, Leg 7, Category 315331



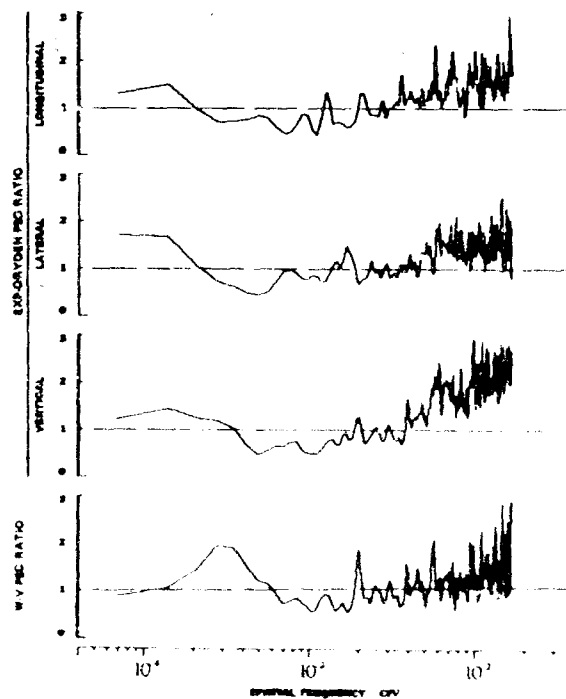
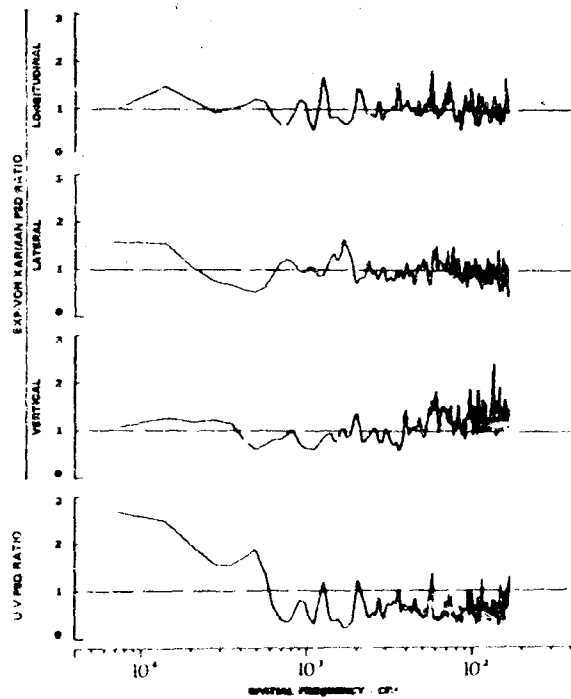
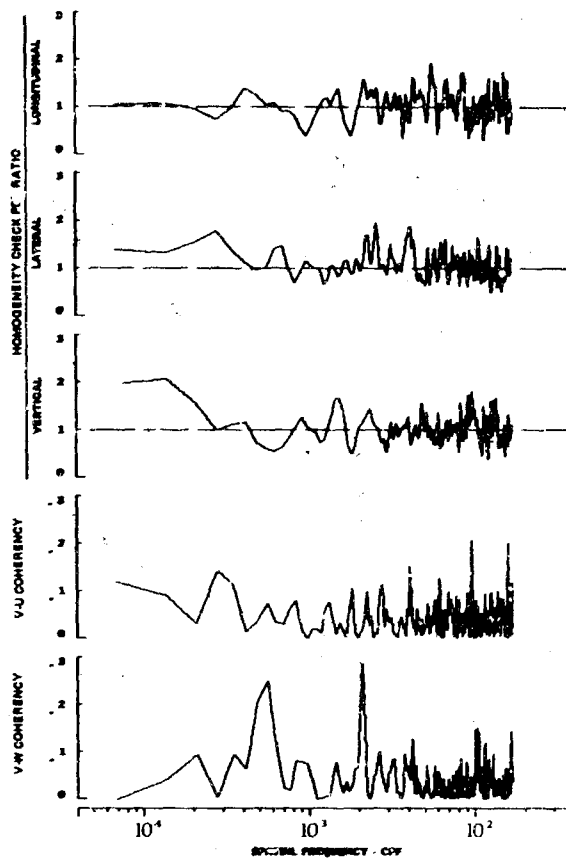
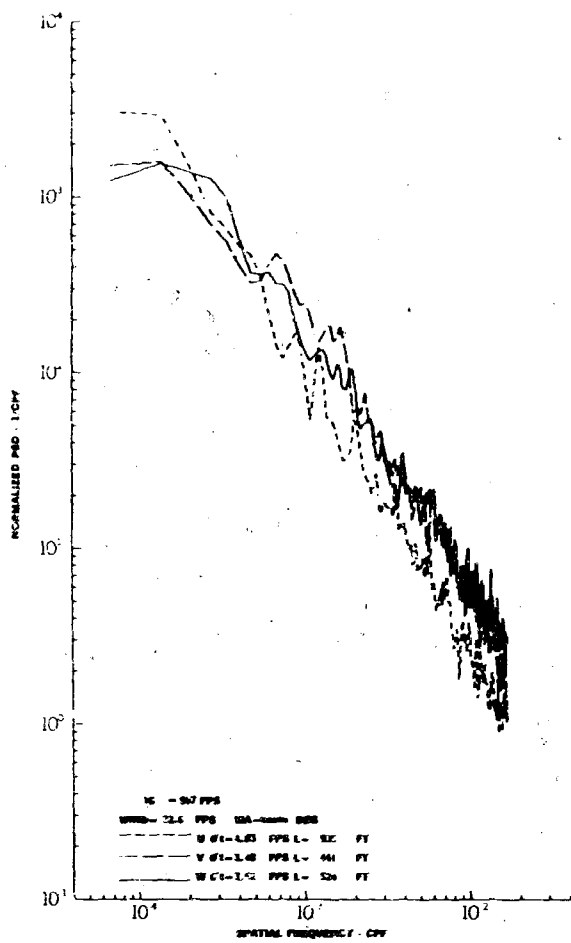
Turbulence Spectra Data For Test 111, Leg 7, Category 321231



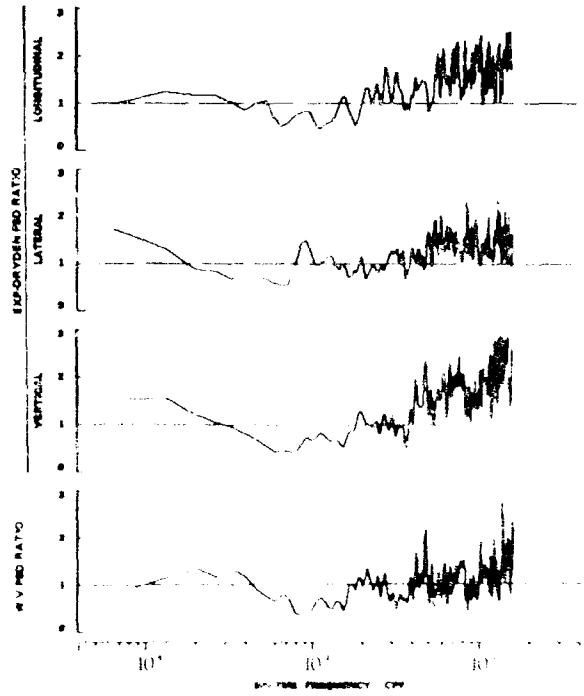
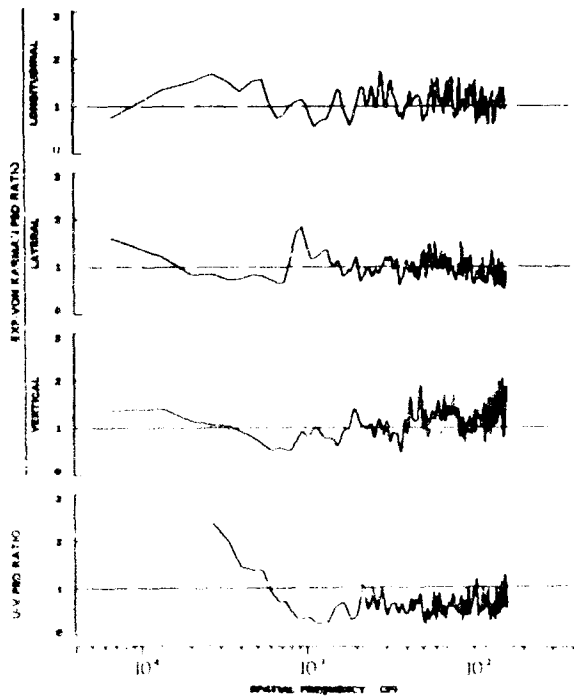
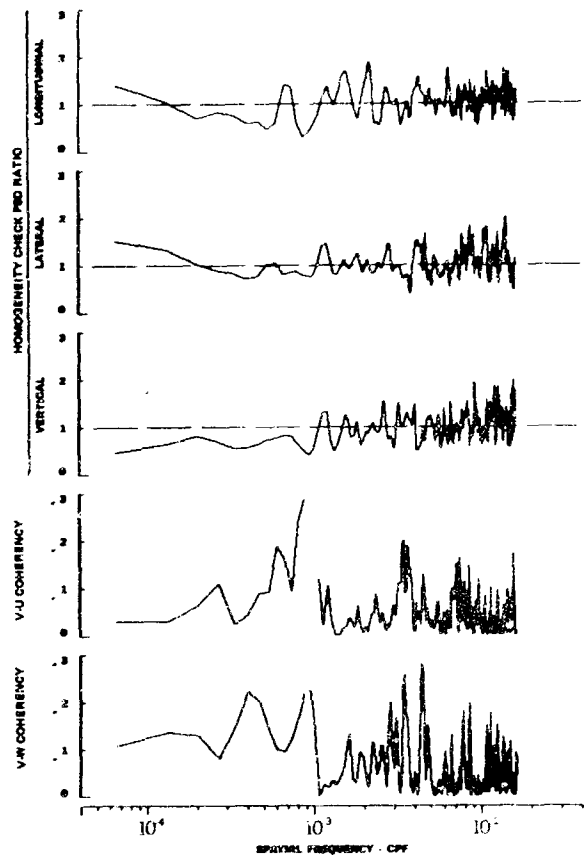
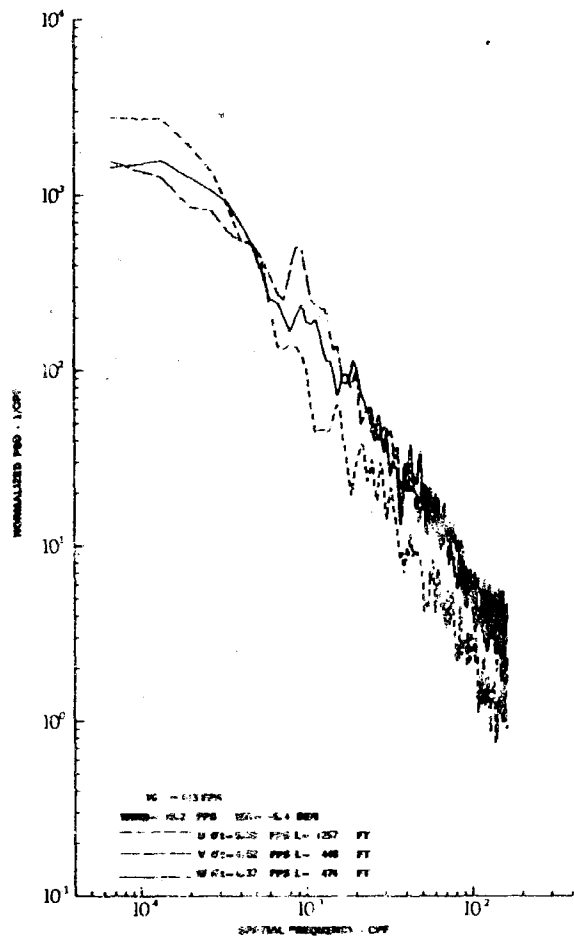
Turbulence Spectra Data for Test 112, Leg 6, Category 20133





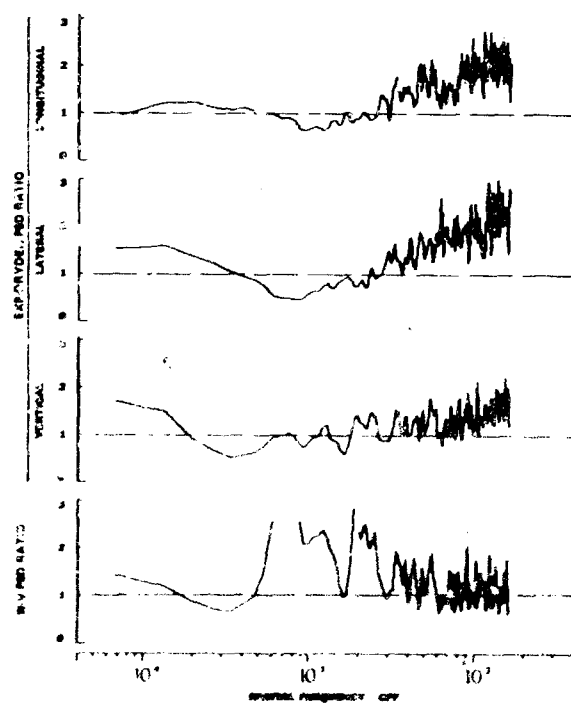
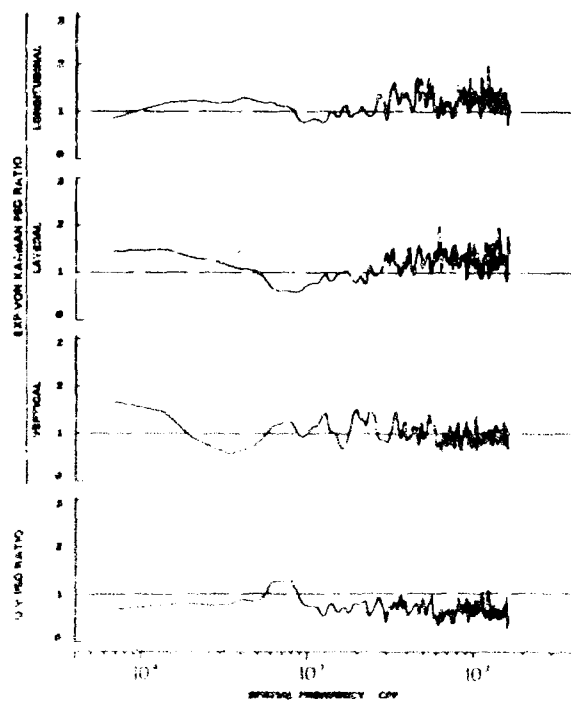
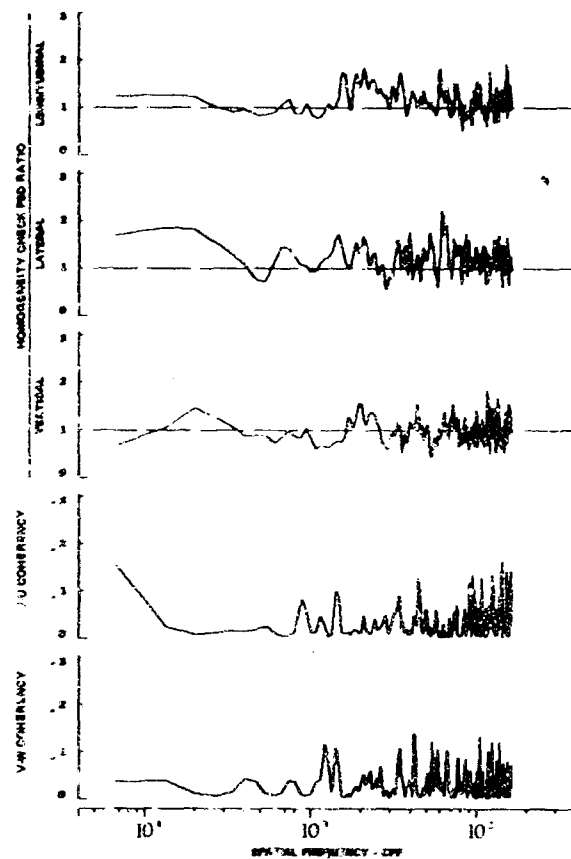
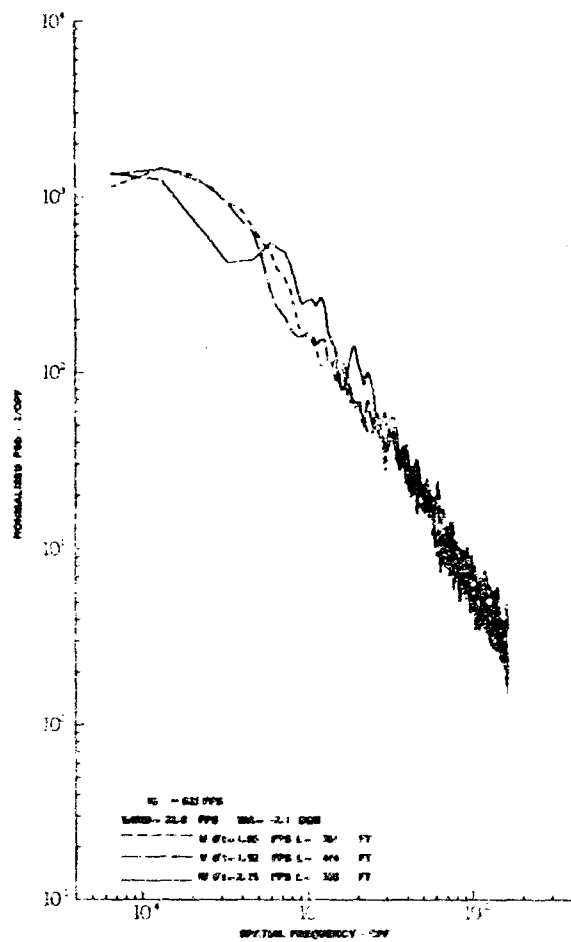


Turbulence Spectra Data For Test 123, Leg 3, Category 121331

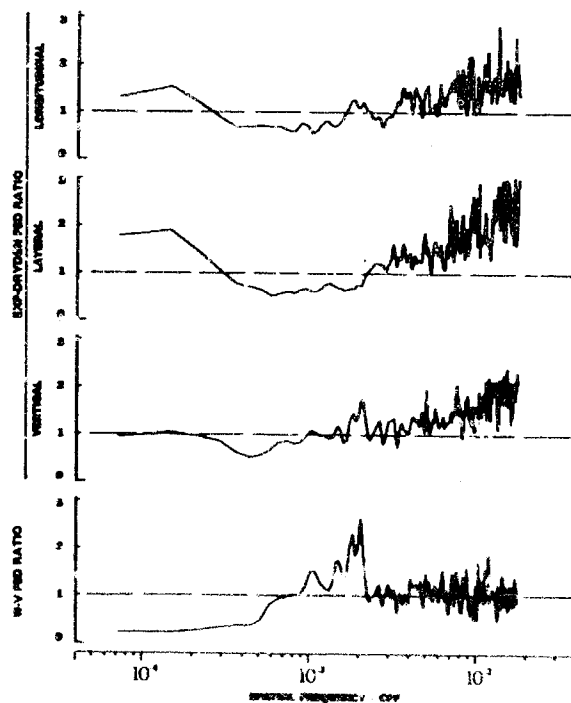
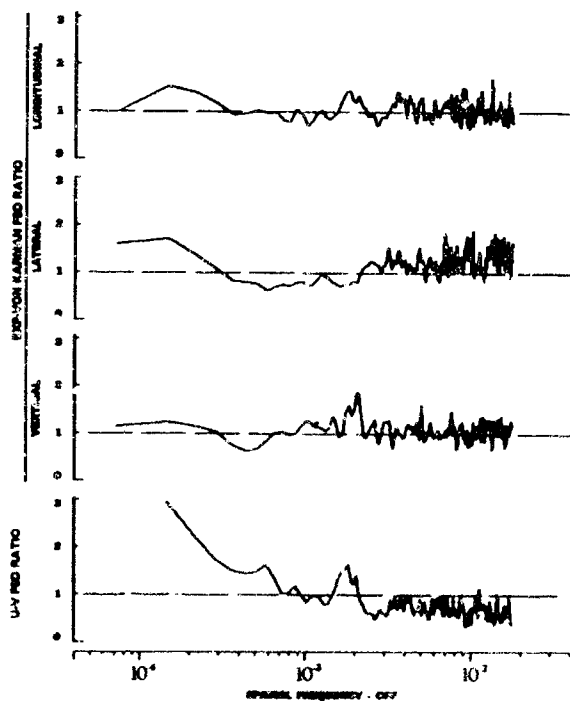
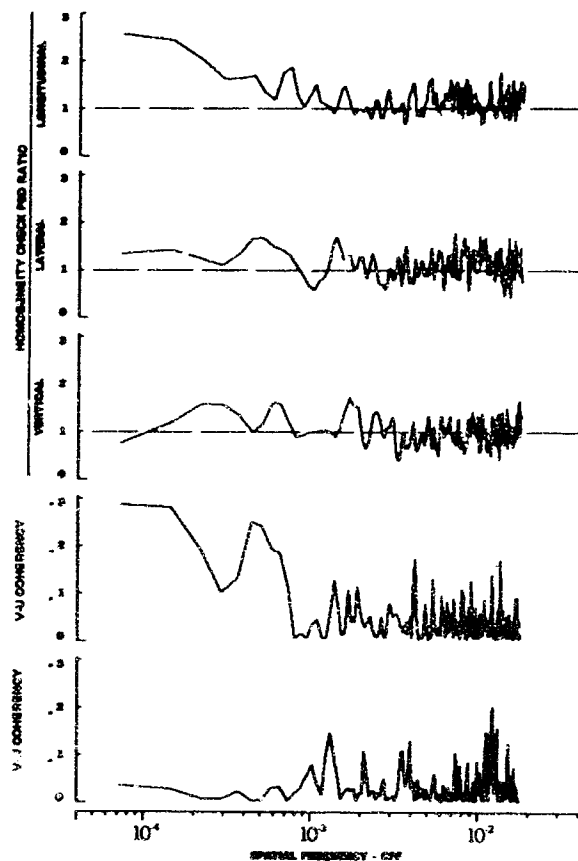
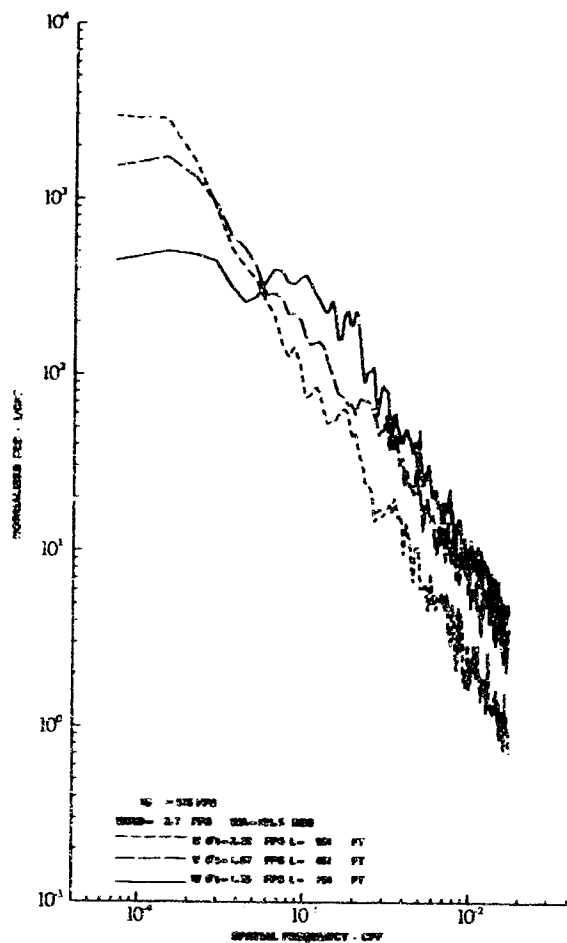


Turbulence Spectra Data for Test 123, Leg 5, Category 122331

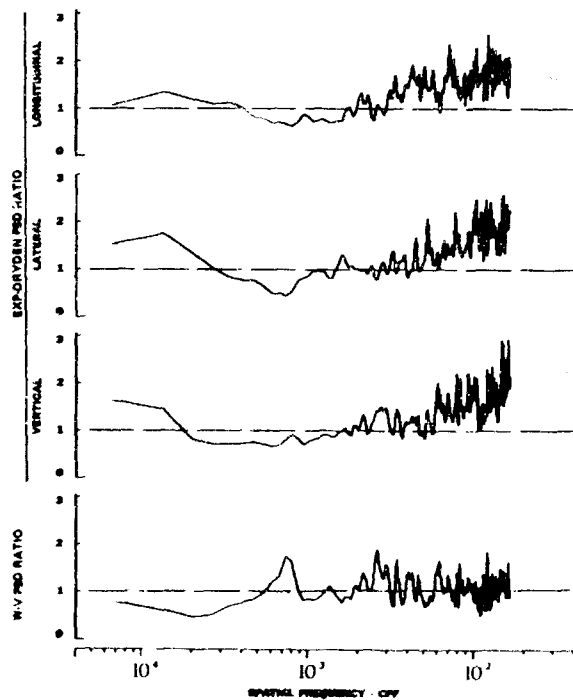
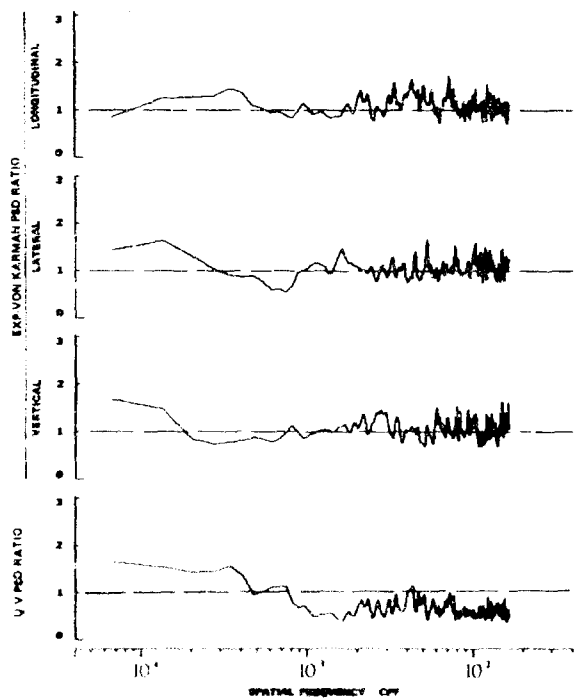
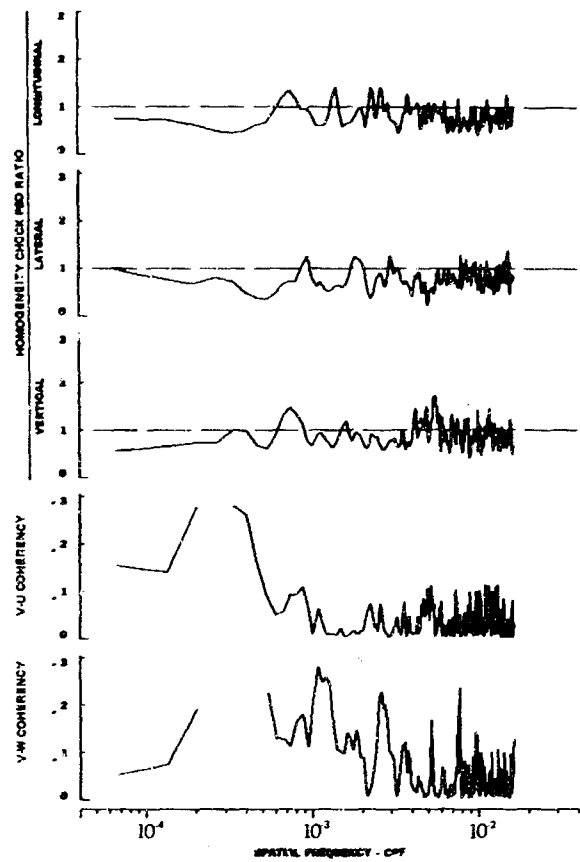
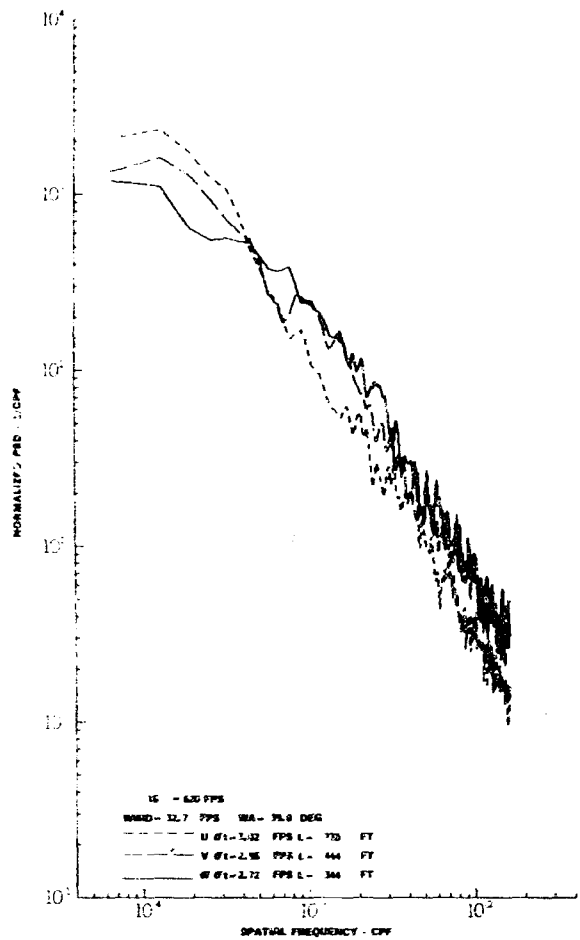




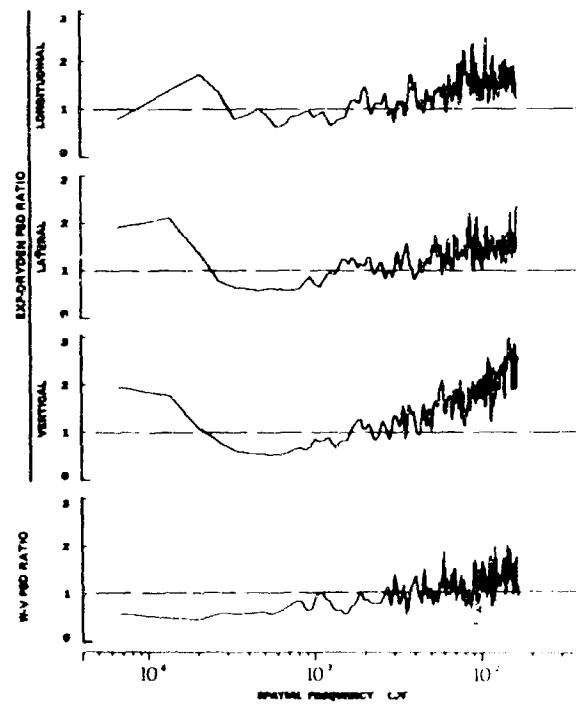
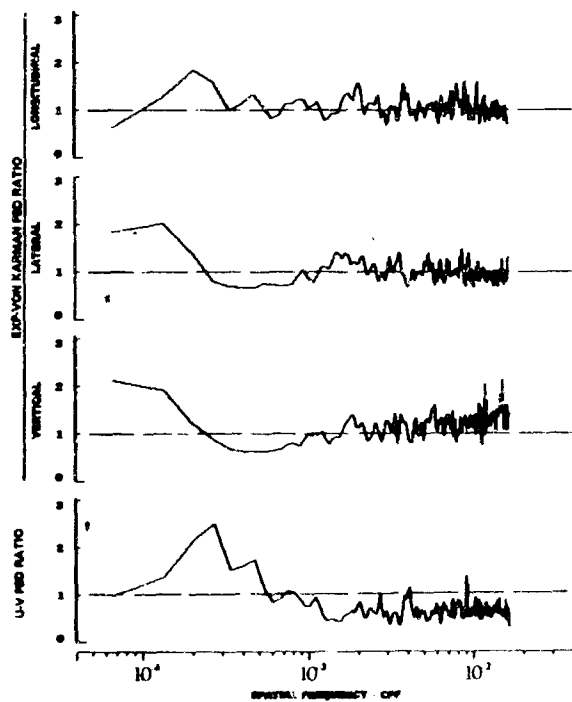
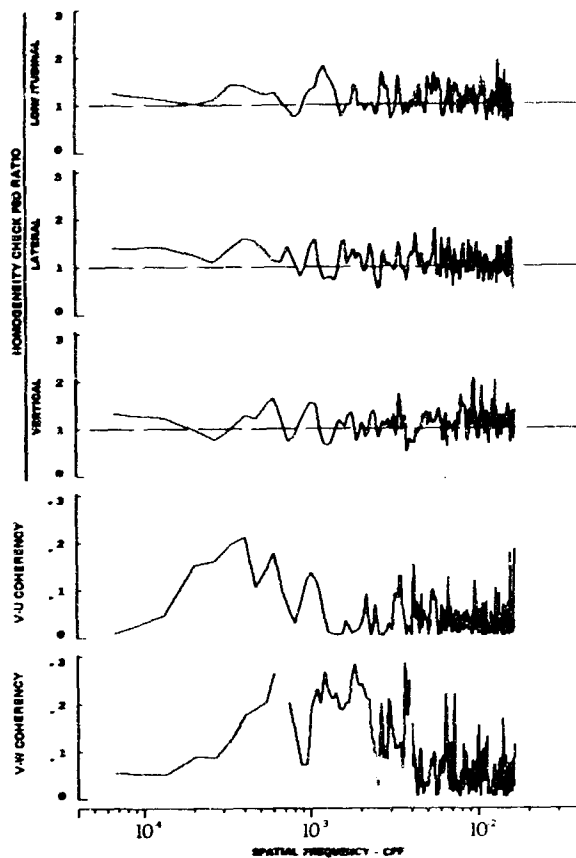
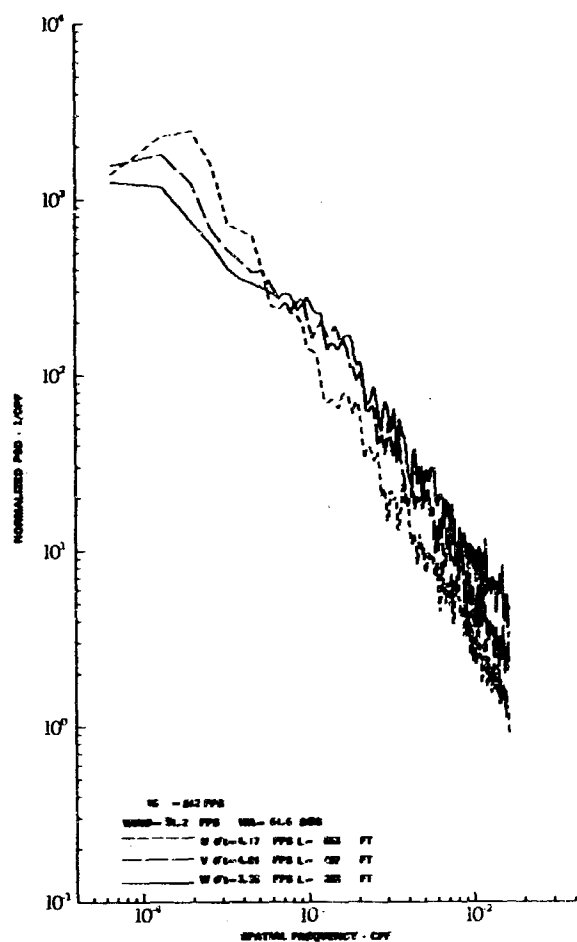
Turbulence Spectra Data For Test 124, Leg 2, Category 312231



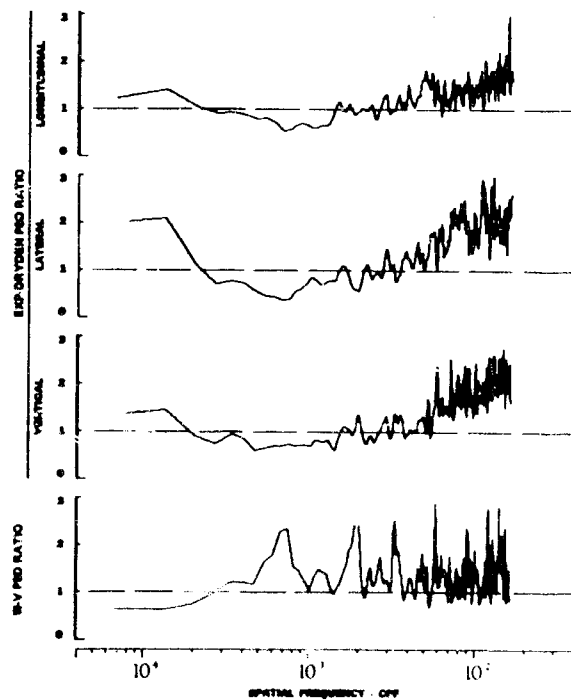
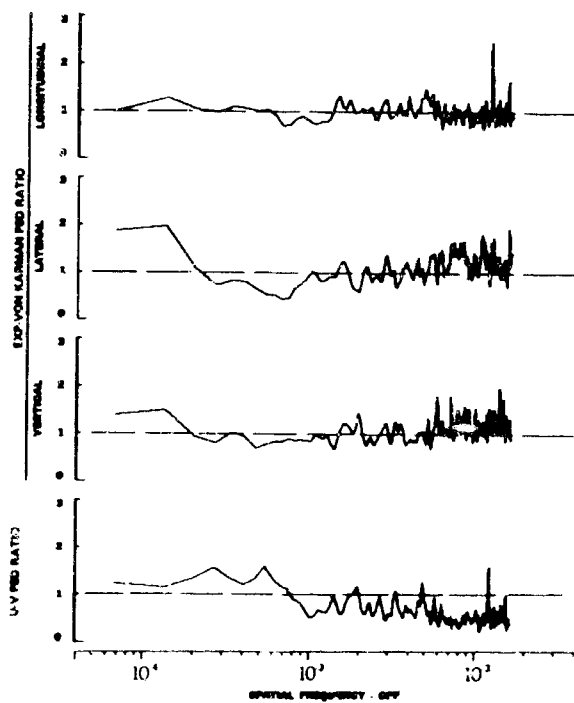
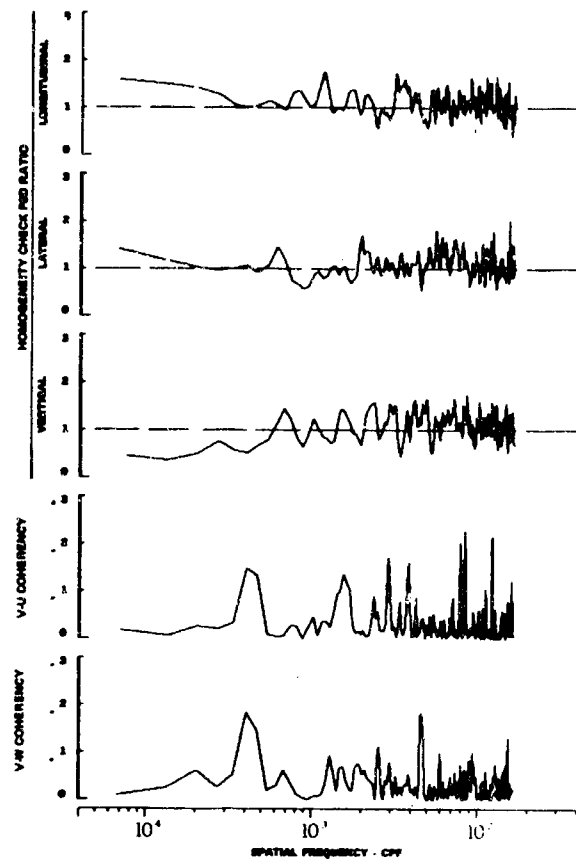
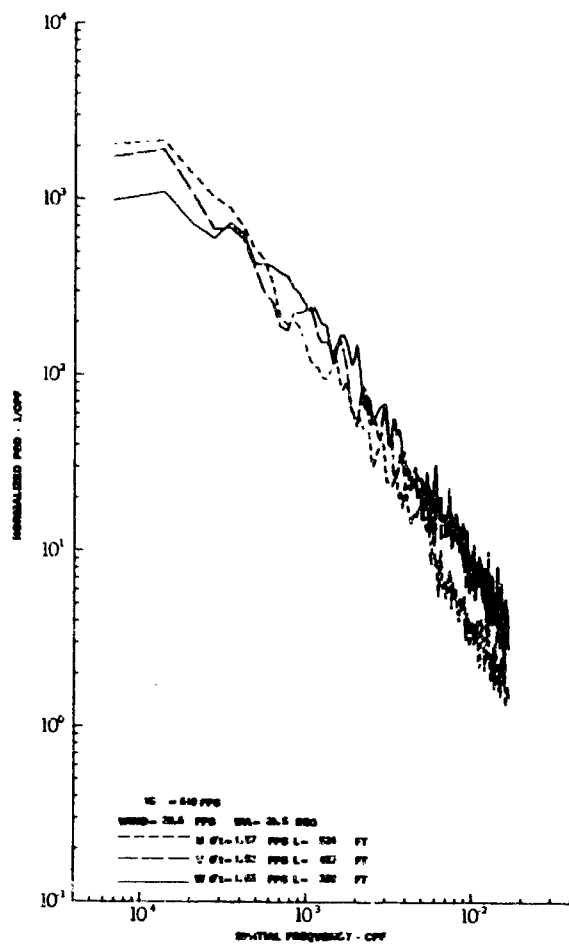
Turbulence Spectra Data For Test 124, Leg 4, Category 612231



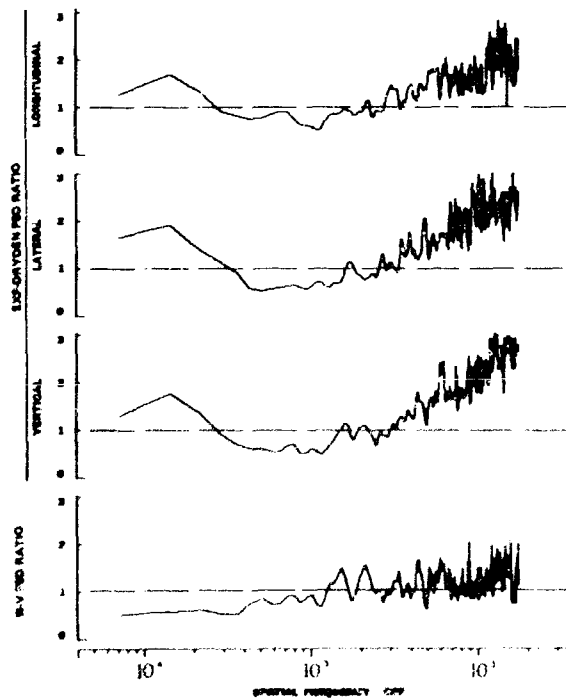
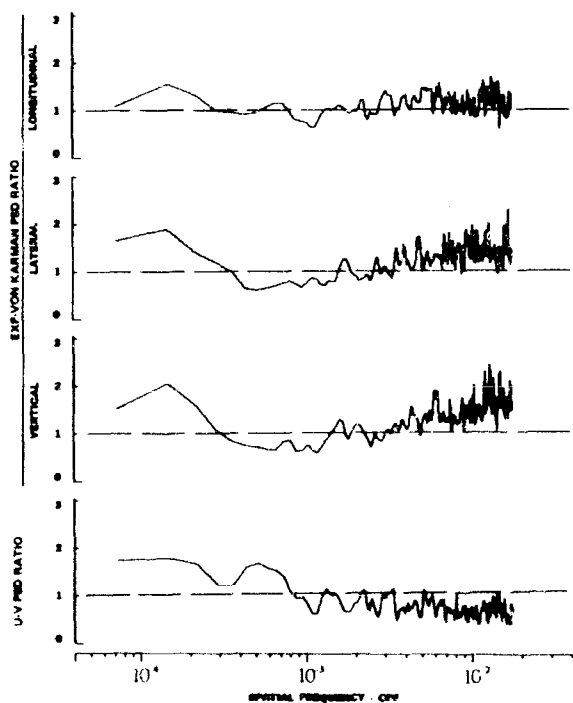
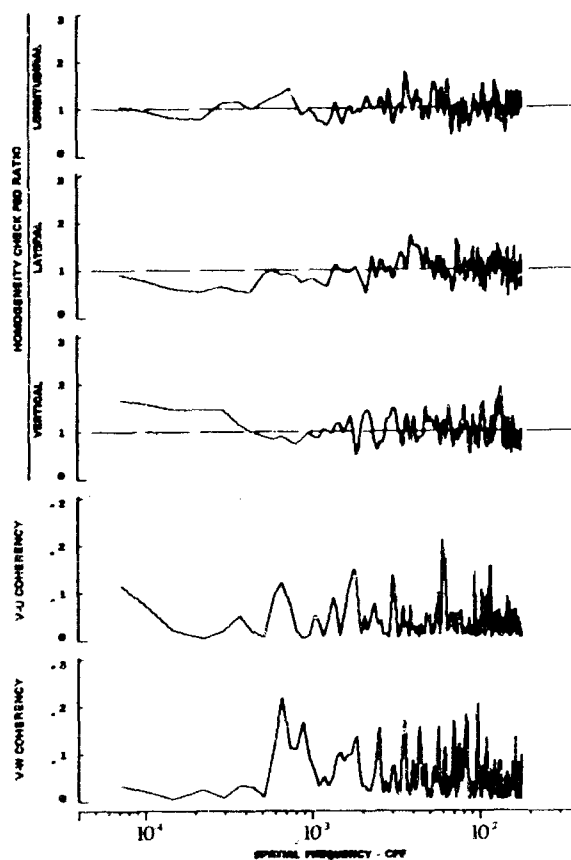
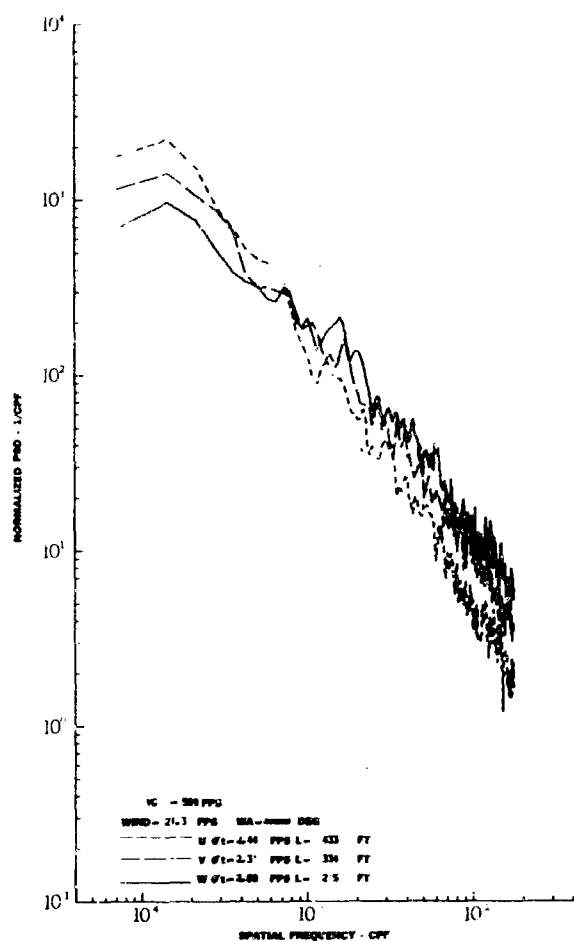
Turbulence Spectra Data For Test 124, Leg 6, Category 213231



Turbulence Spectra Data for Test 124, Leg 8, Category 213231

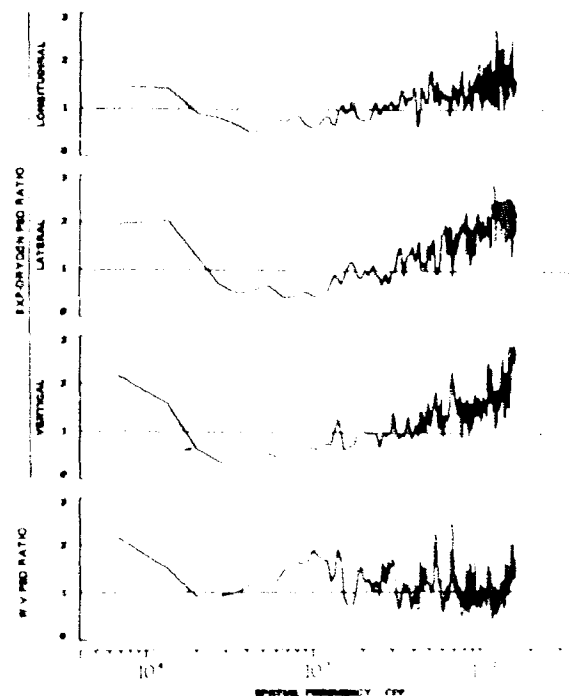
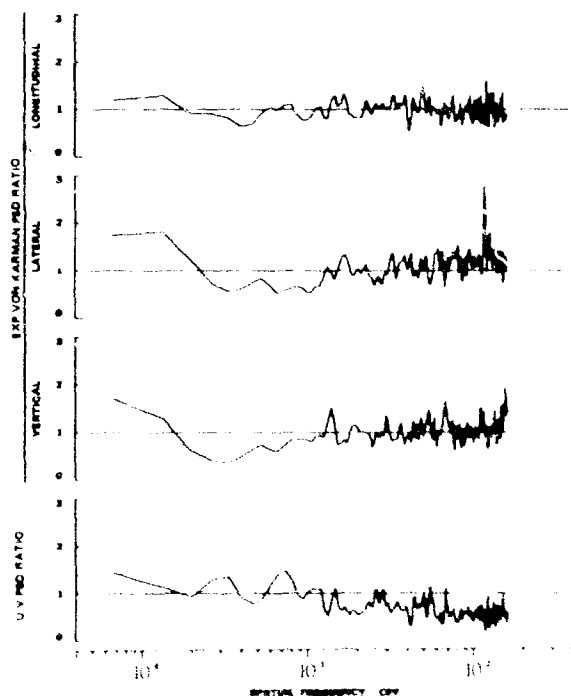
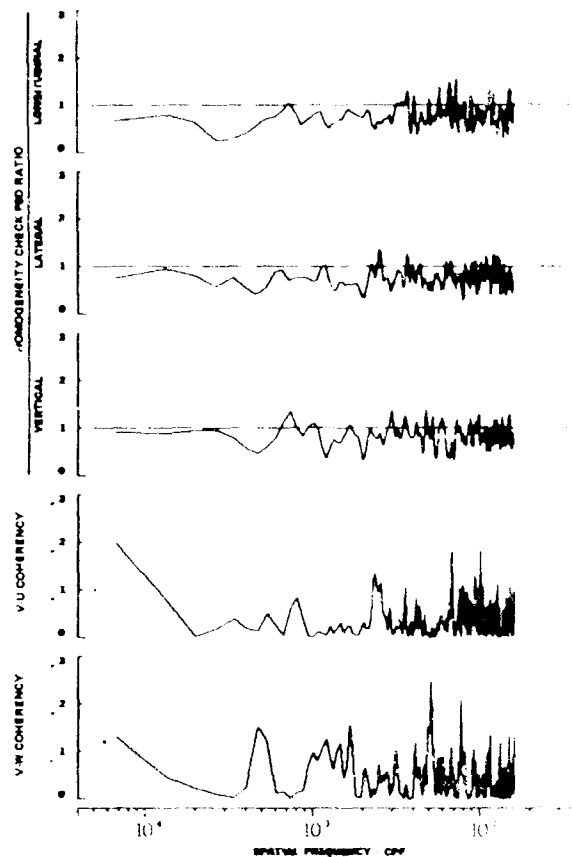
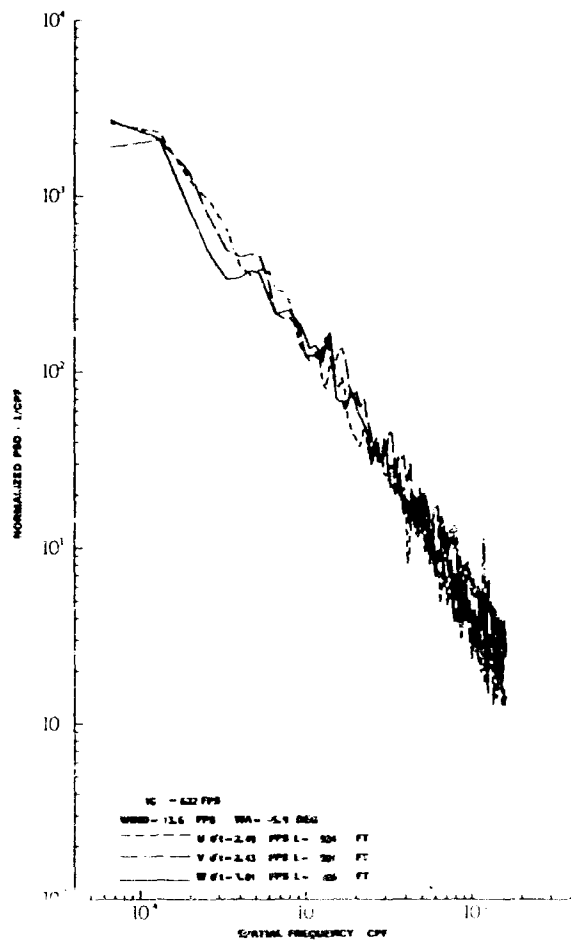


Turbulence Spectra Data for Test 125, Leg 7, Category 314331



Turbulence Spectra Data For Test 130, Leg 4, Category 613231

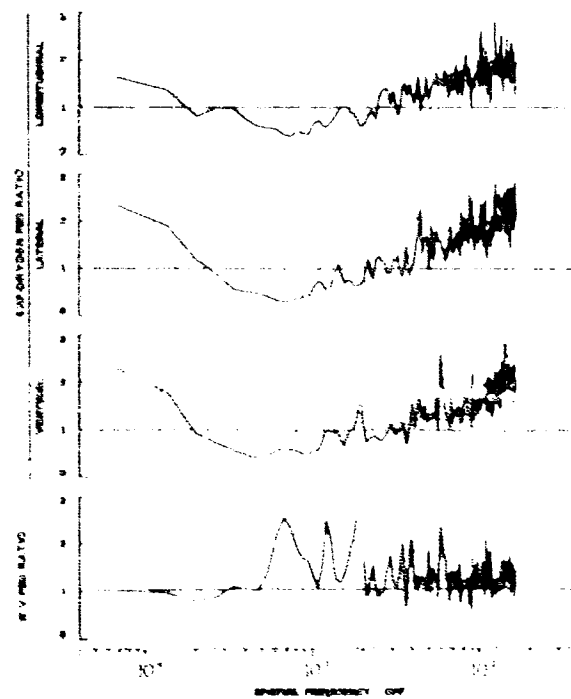
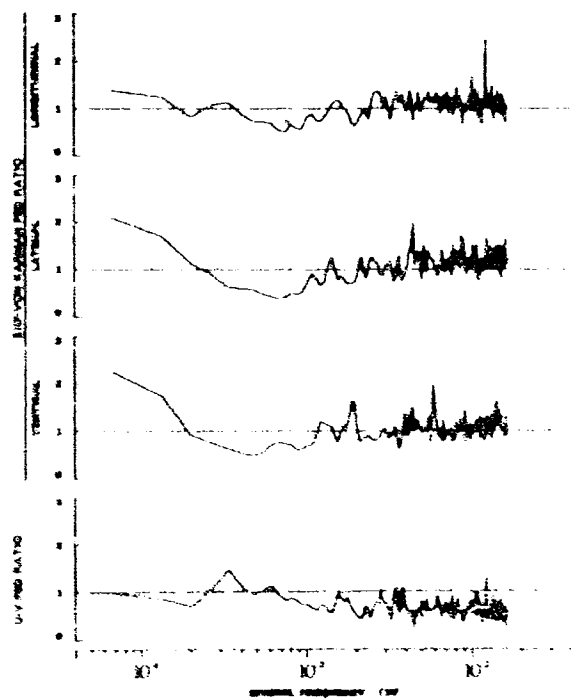
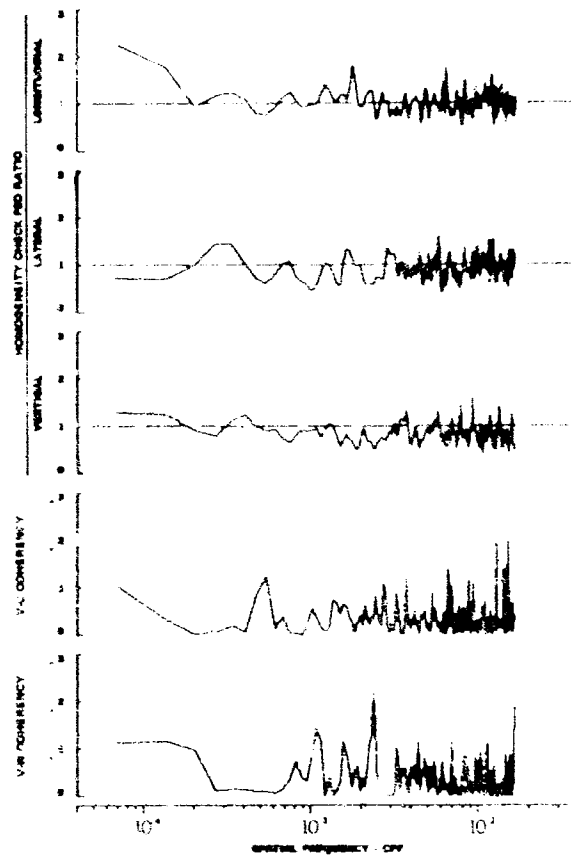
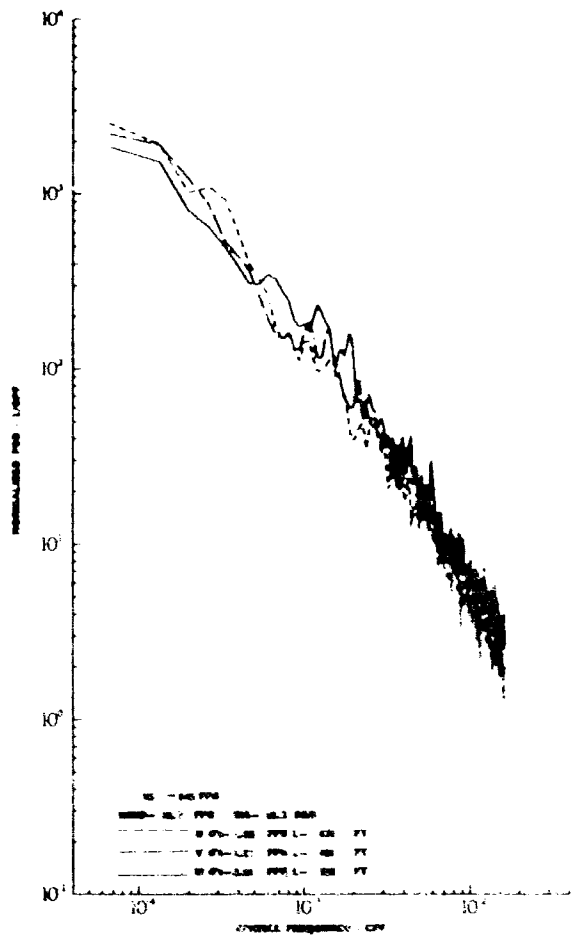




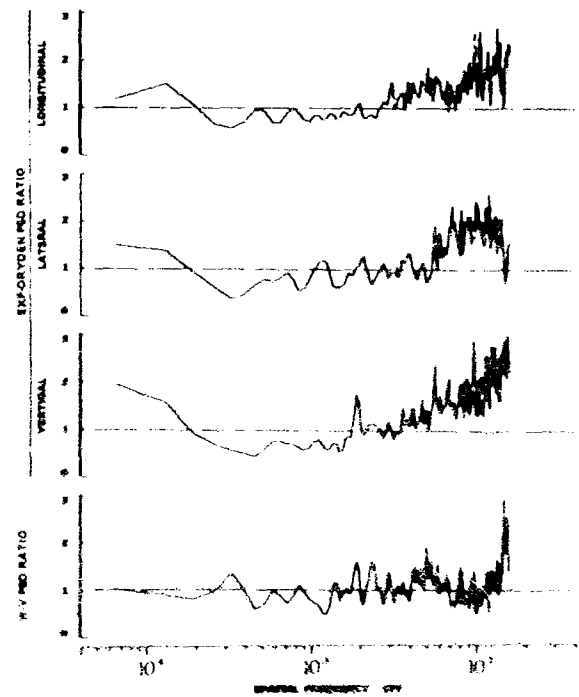
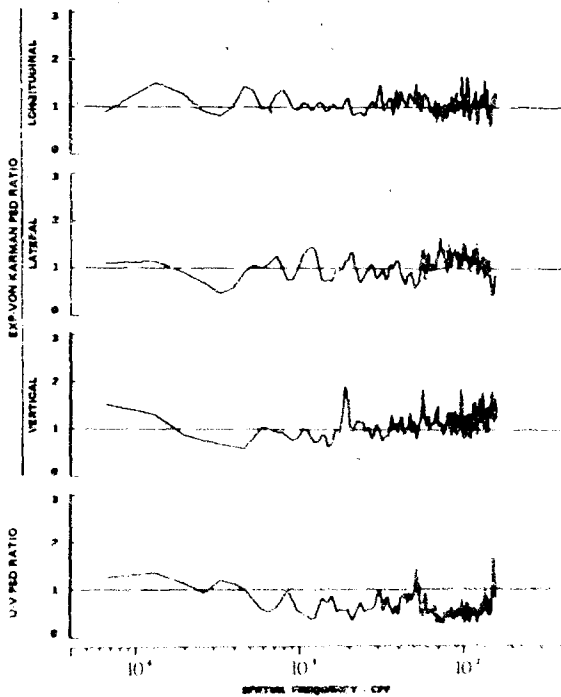
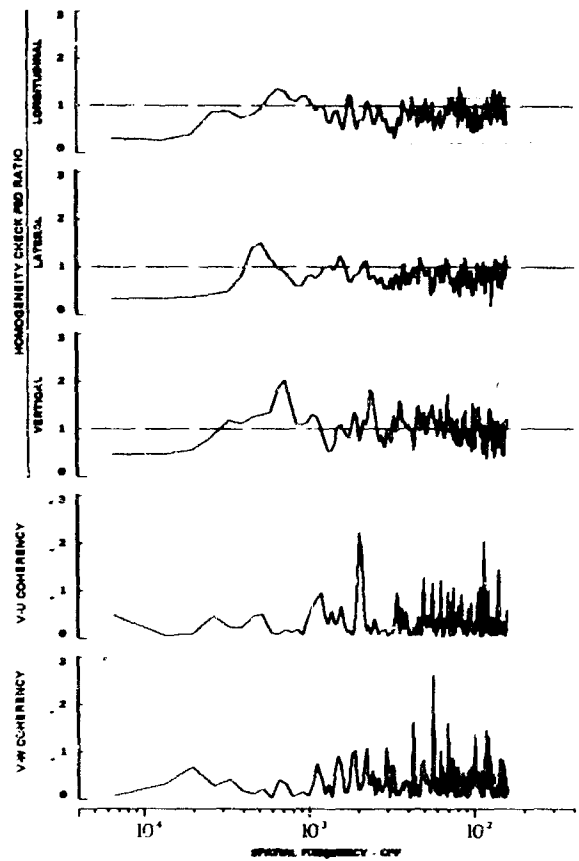
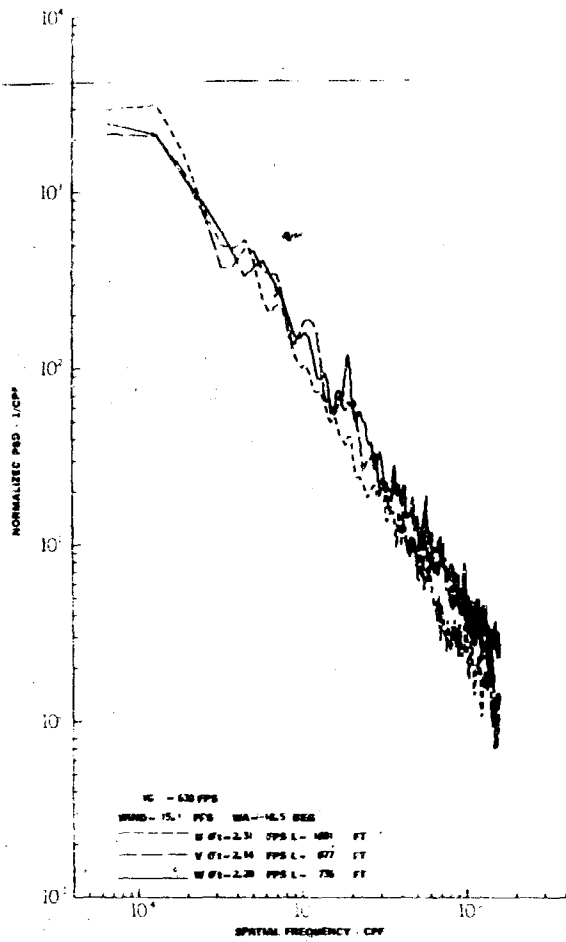
Turbulence Spectra Data For Test 135, Leg 3, Category 111341



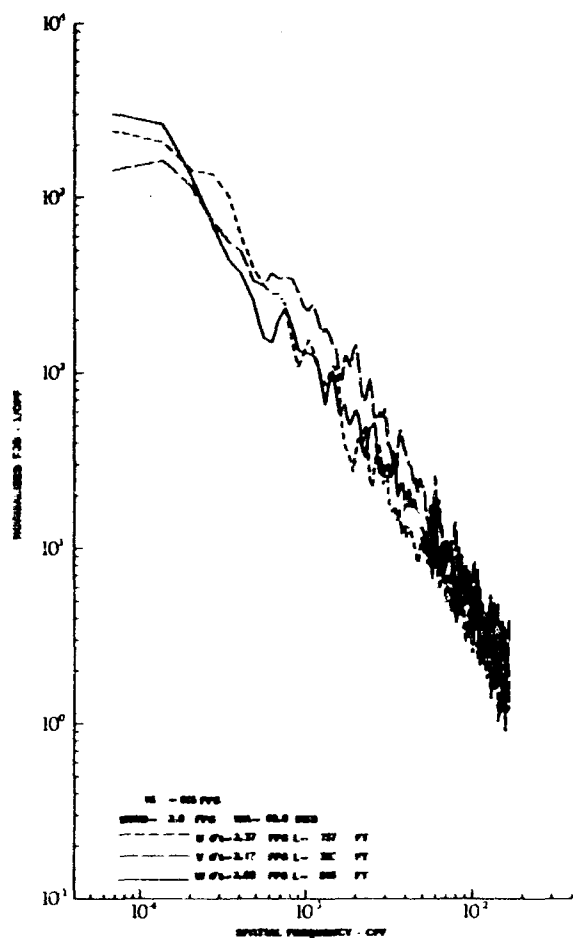


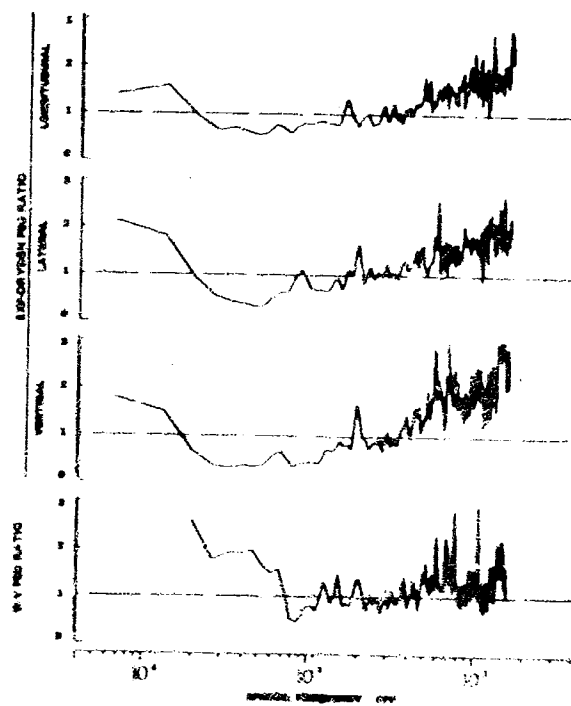
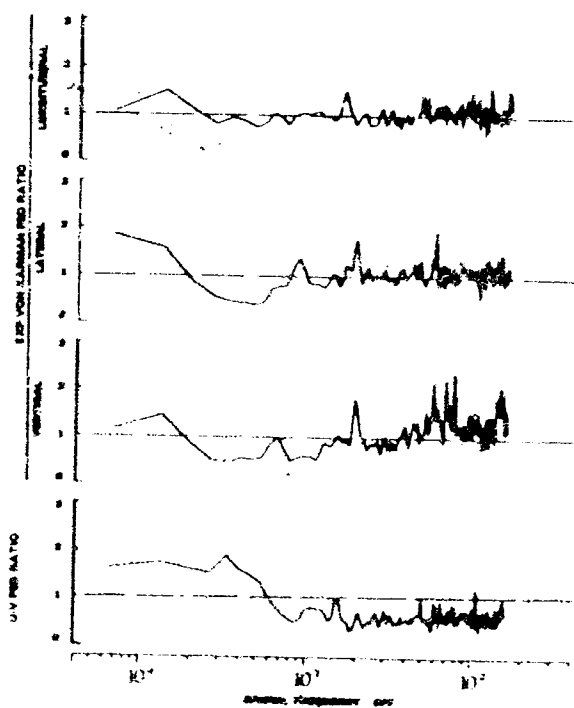
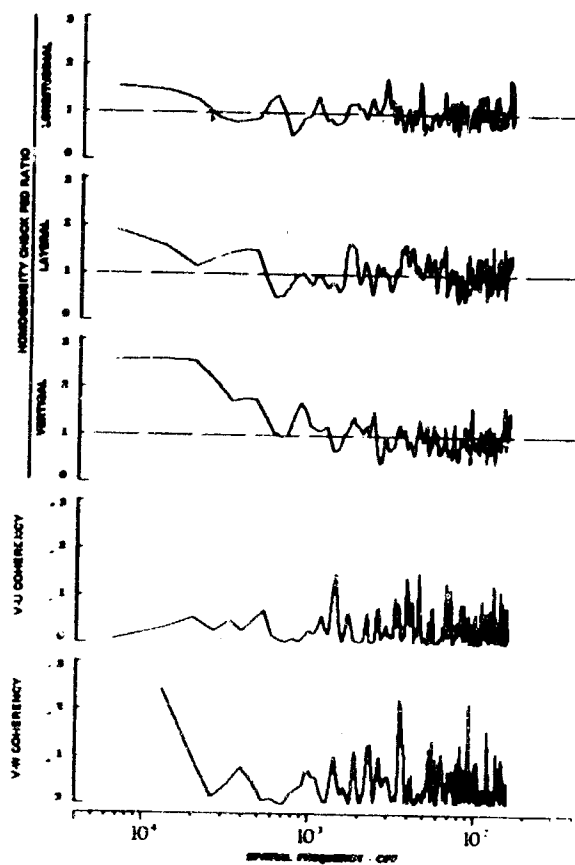
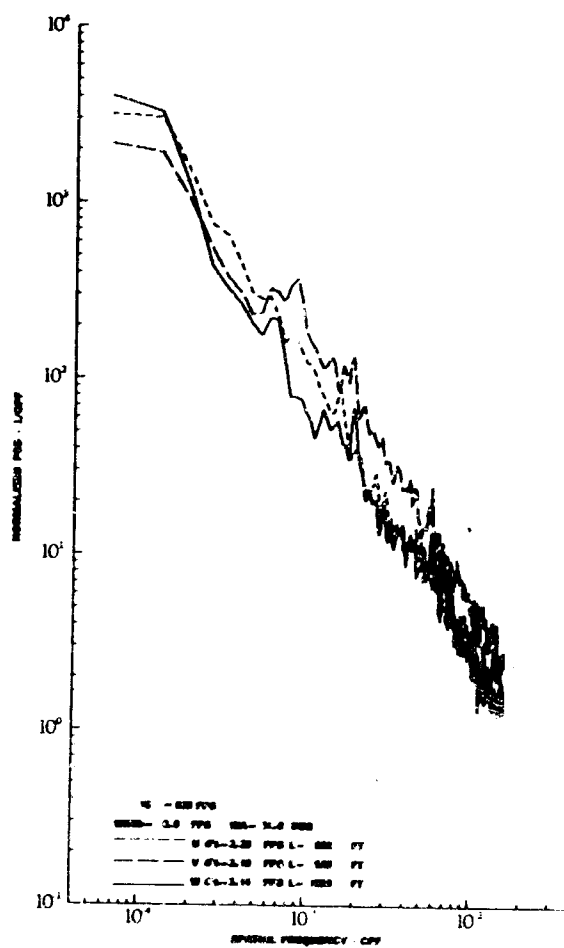


Turbulence Spectra Data For Test 135, Leg 7, Category 312341

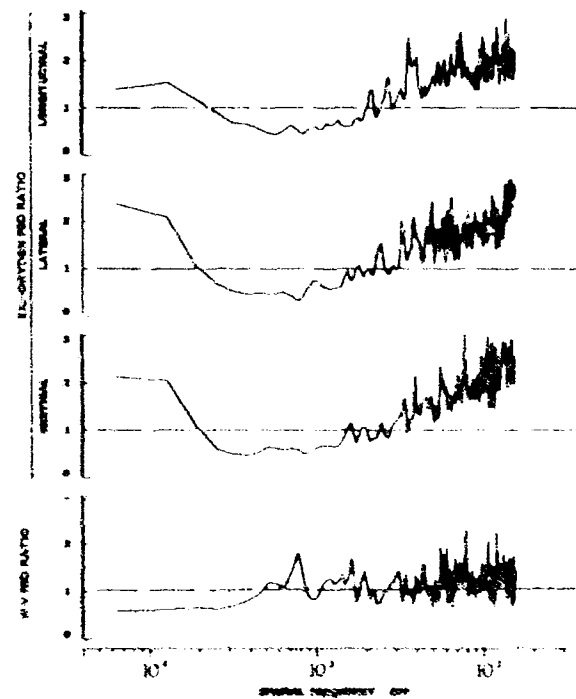
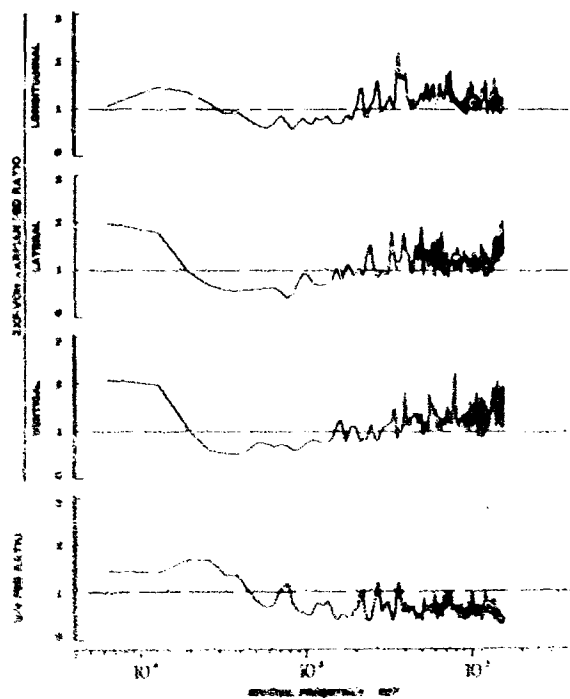
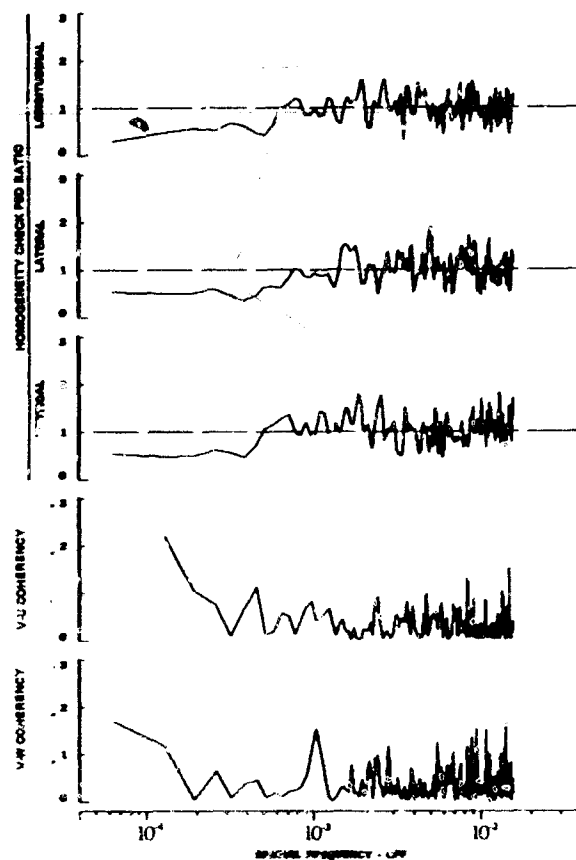
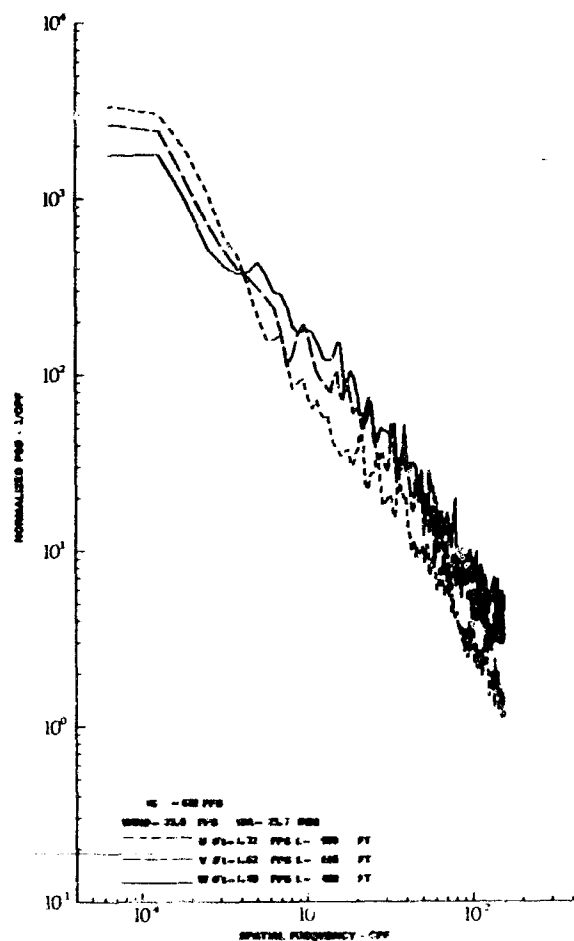


Turbulence Spectra Data For Test 141, leg 1, Category 223341

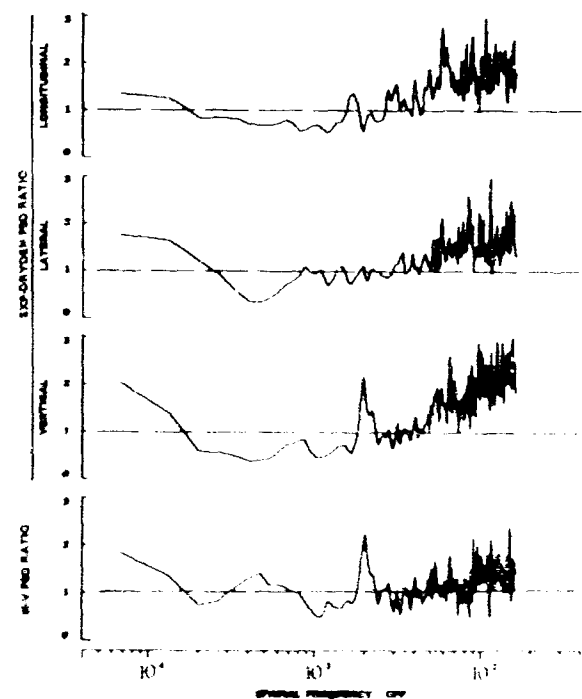
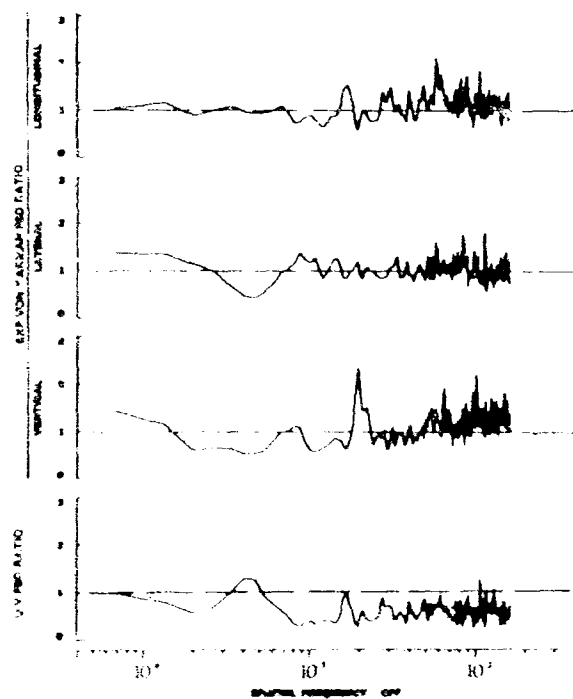
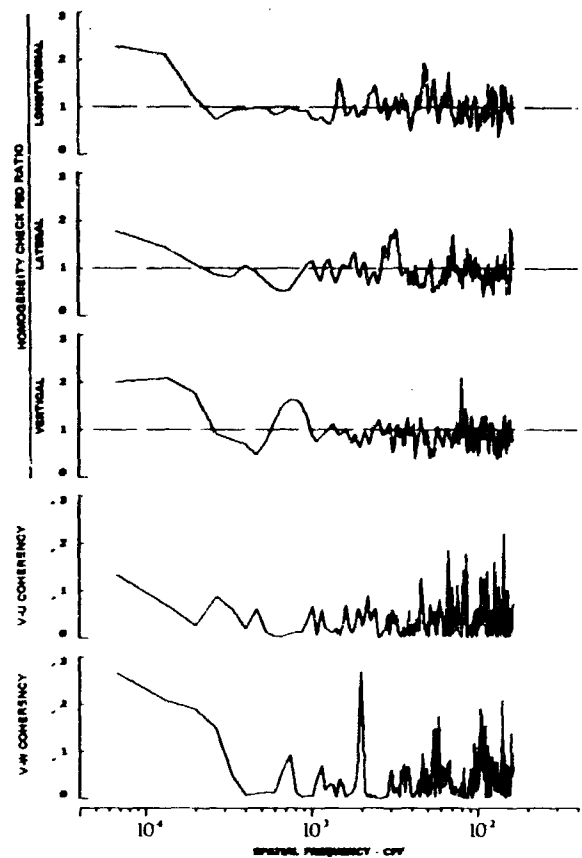
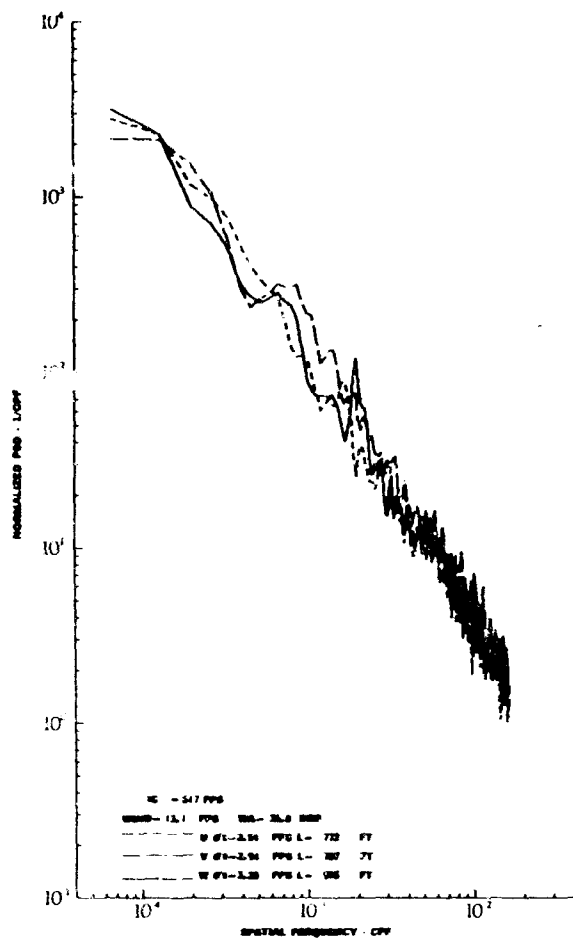




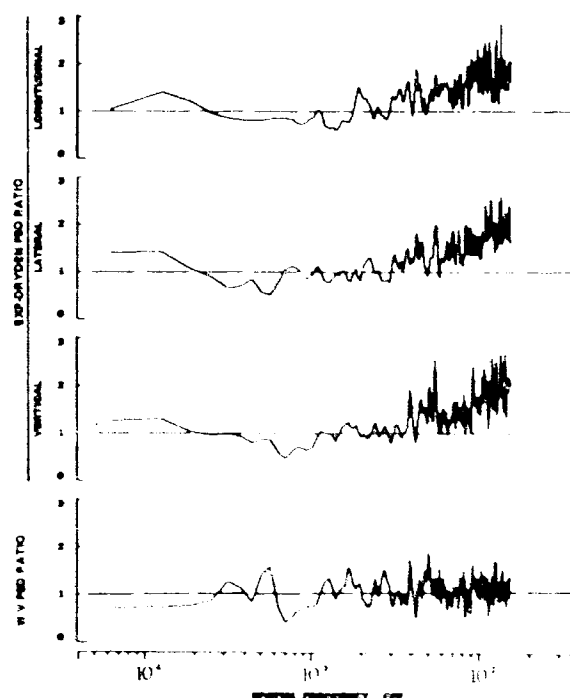
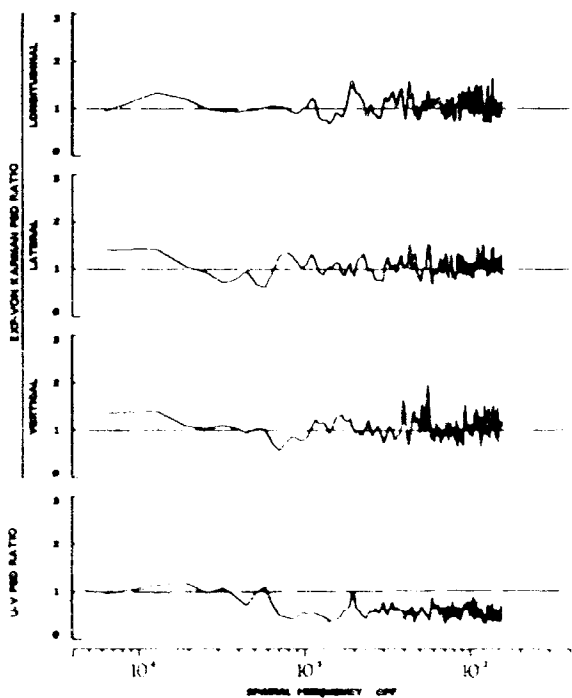
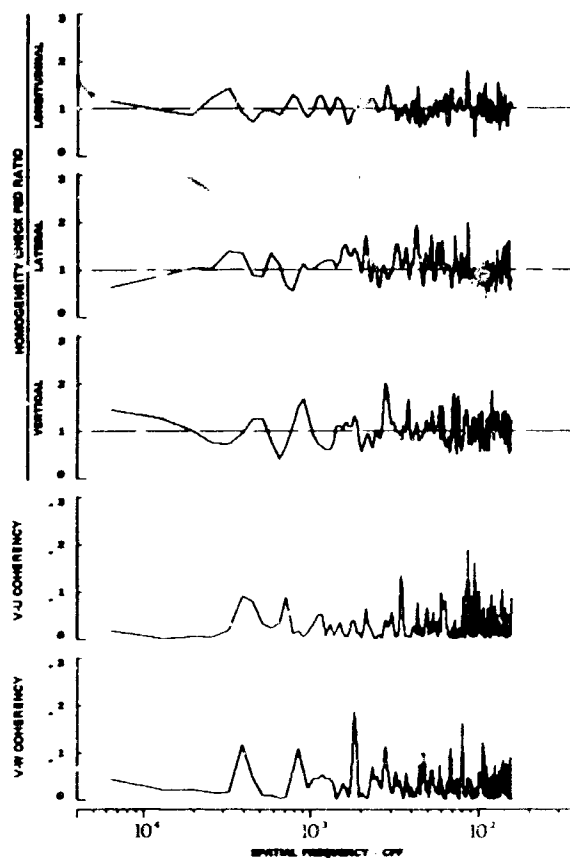
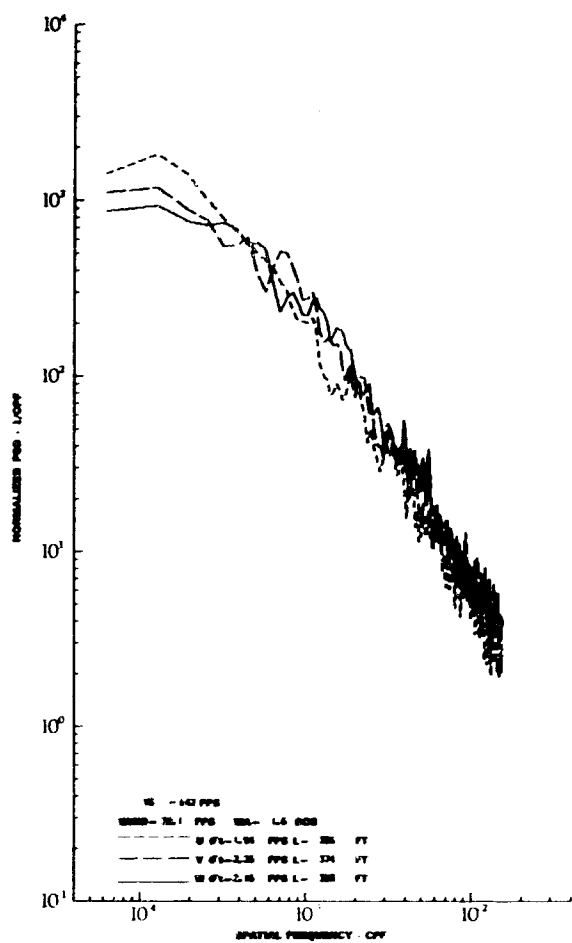
Turbulence Spectra Data For Test 141, Leg 5, Category 123341



Turbulence Spectra Data For Test 144, Log 6, Category 212341

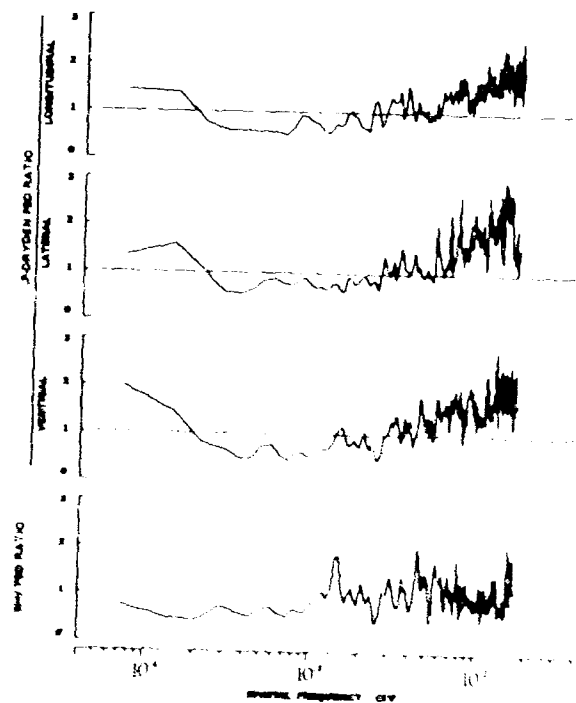
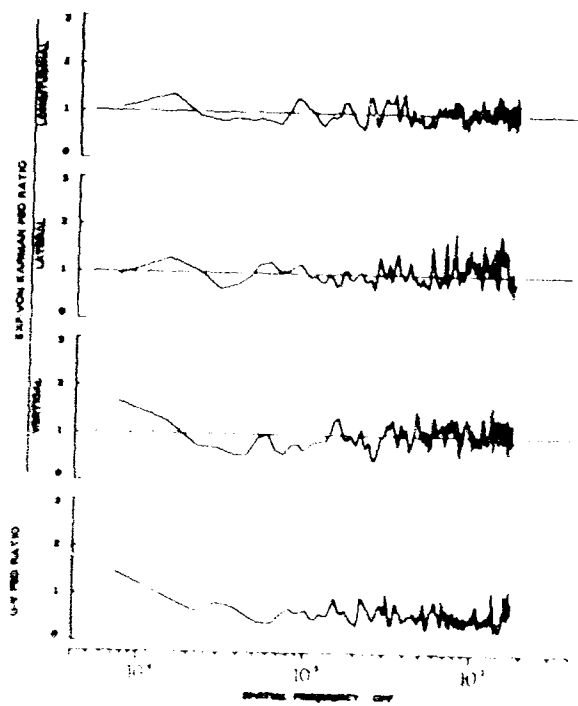
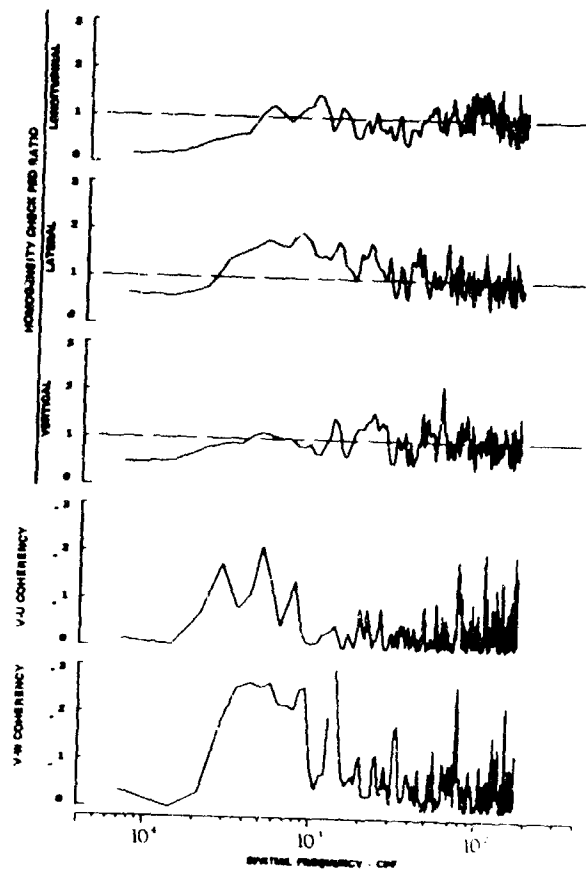
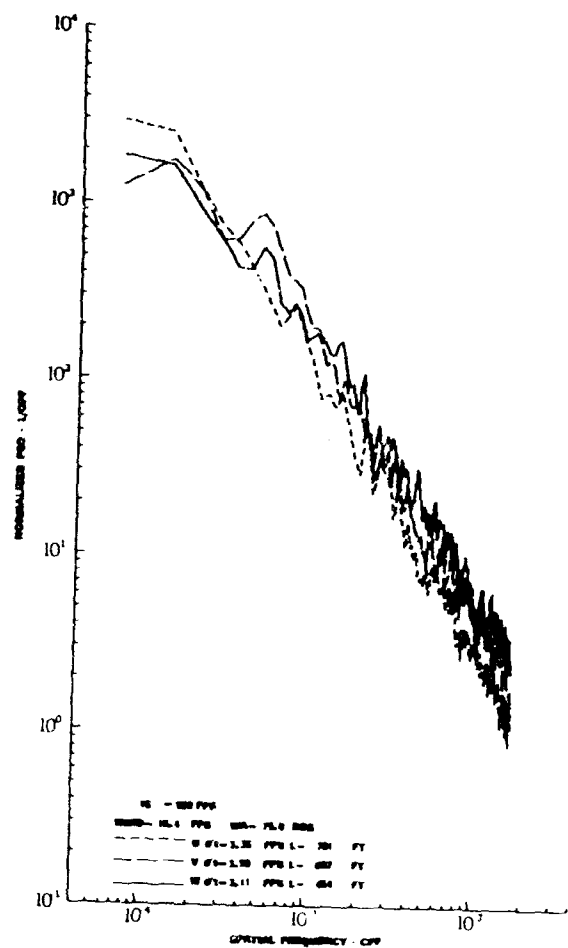


Turbulence Spectra Data For Test 147, Leg 5, Category 122141

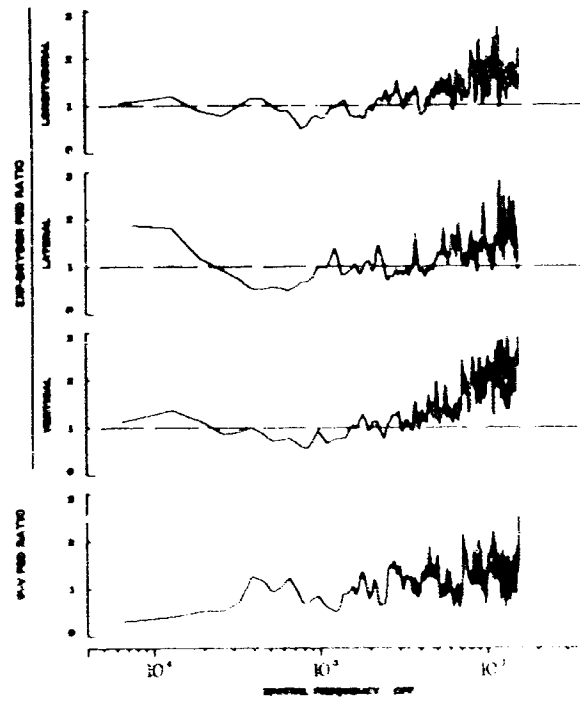
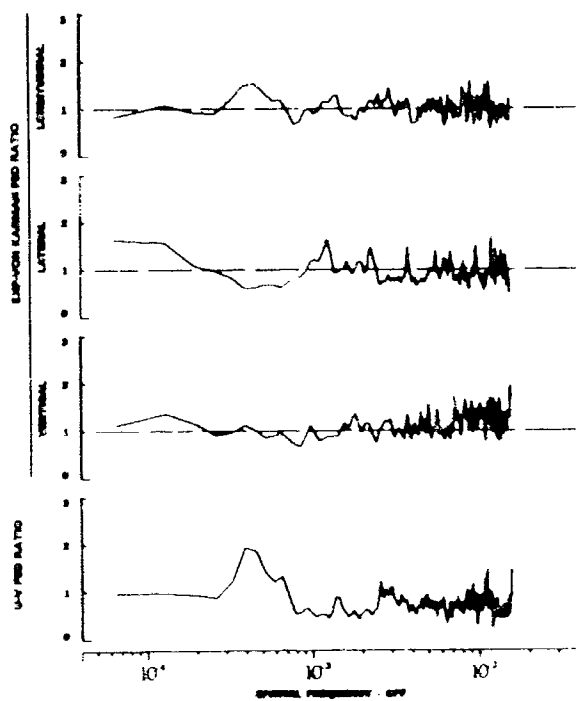
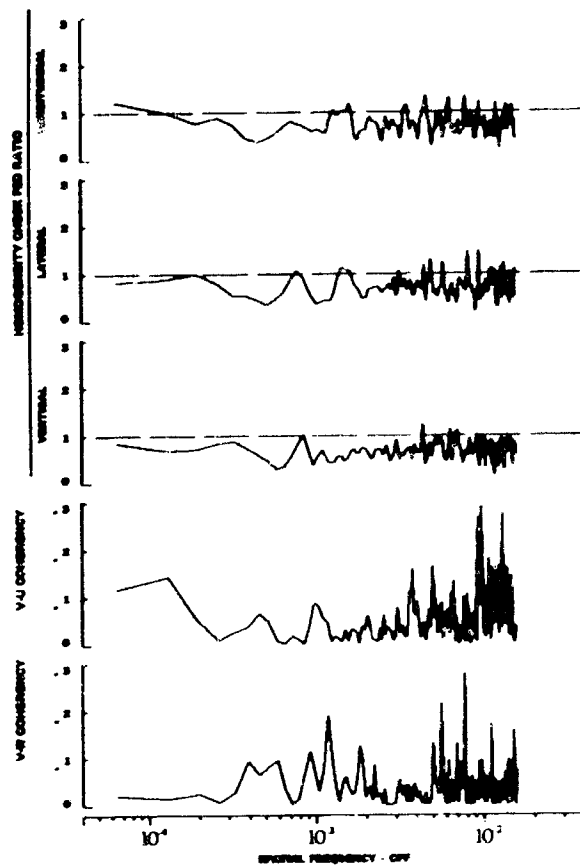
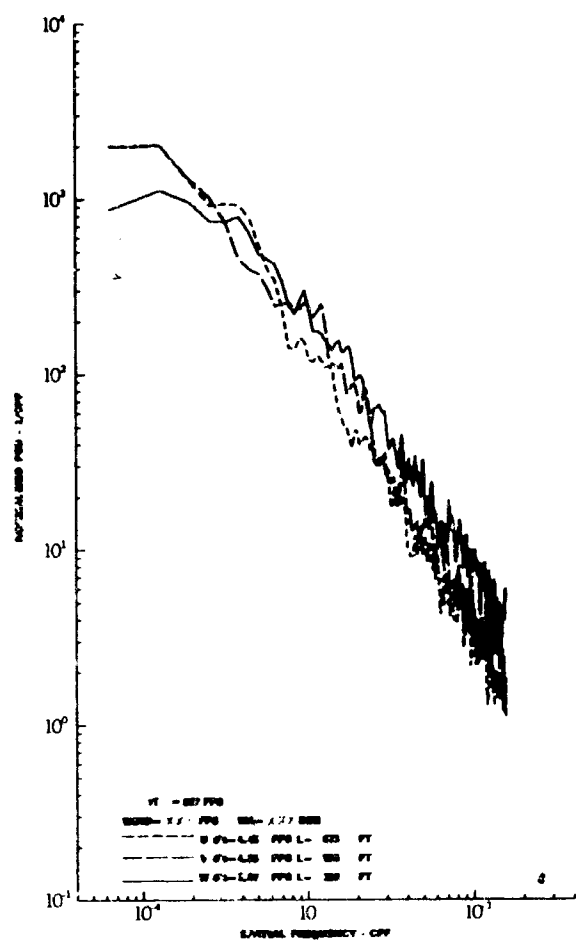


Turbulence Spectra Data For Test 150, Leg 6, Category 214341

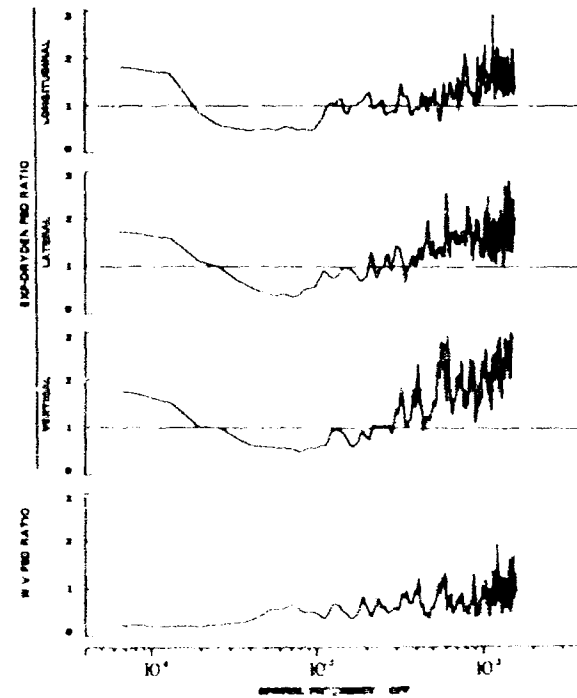
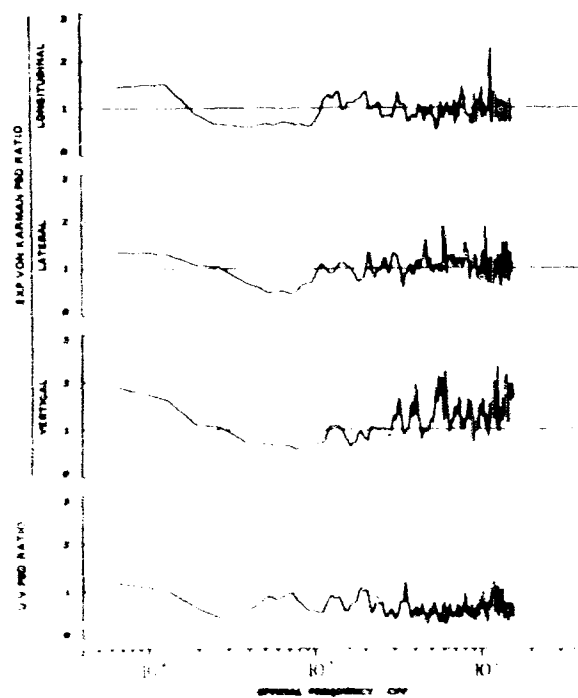
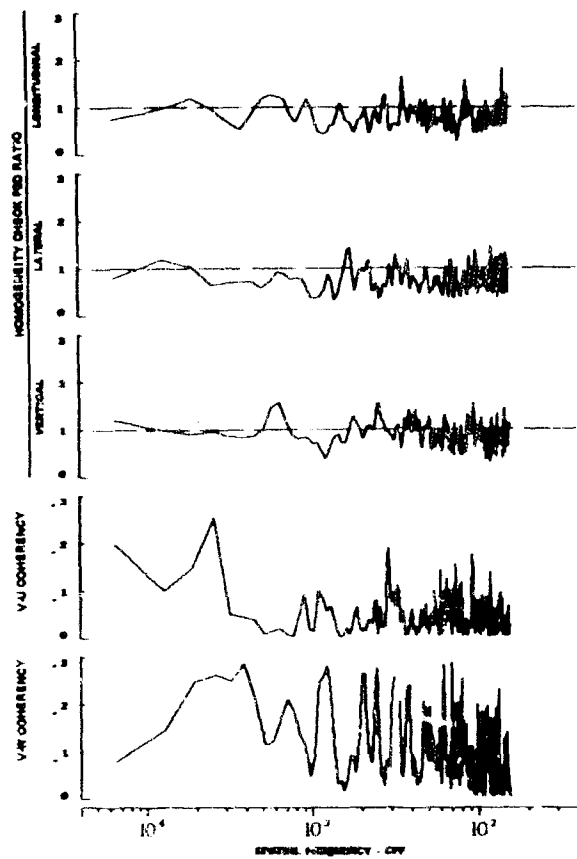
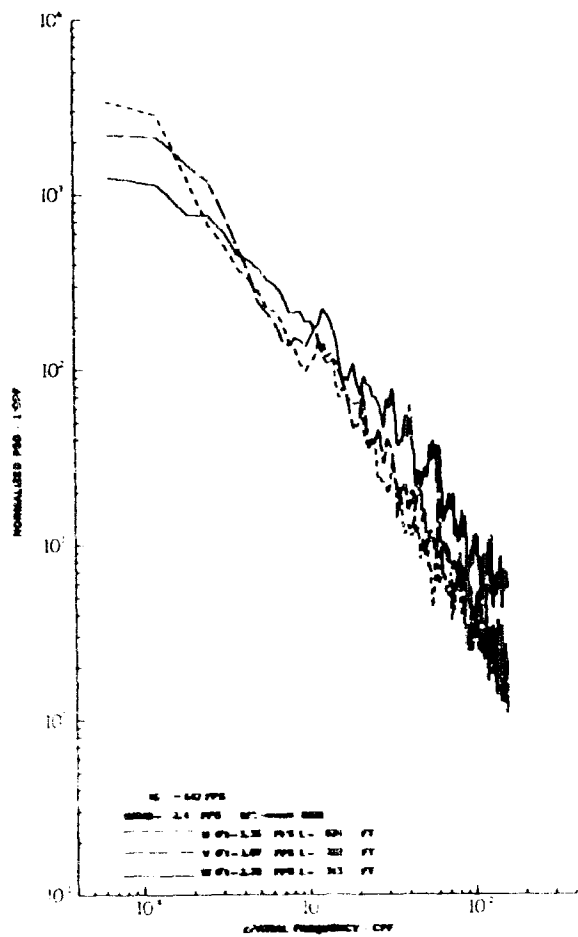




Turbulence Spectra Data For Test 153, Leg 1, Category 122243

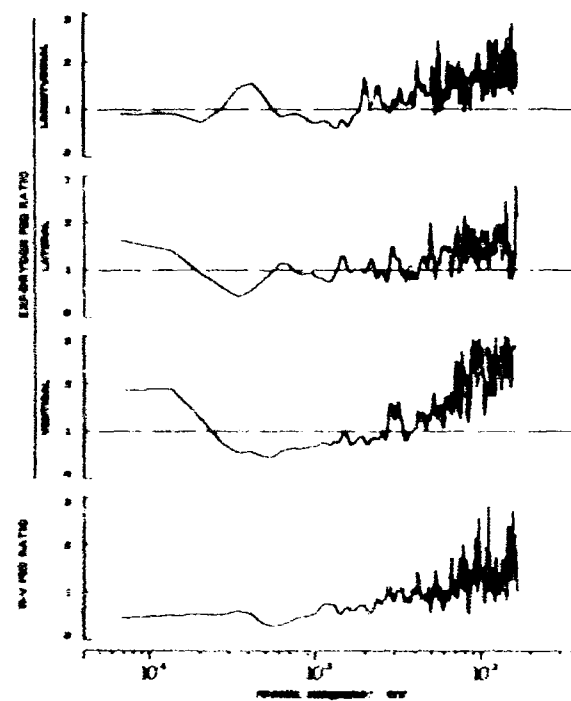
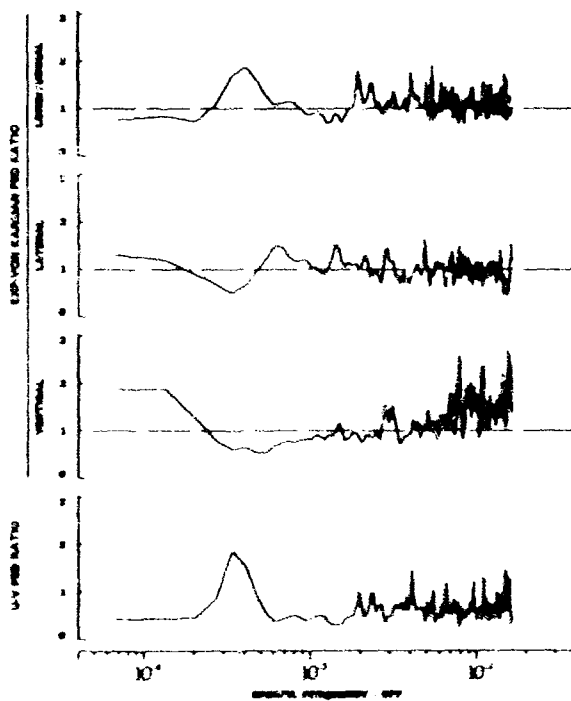
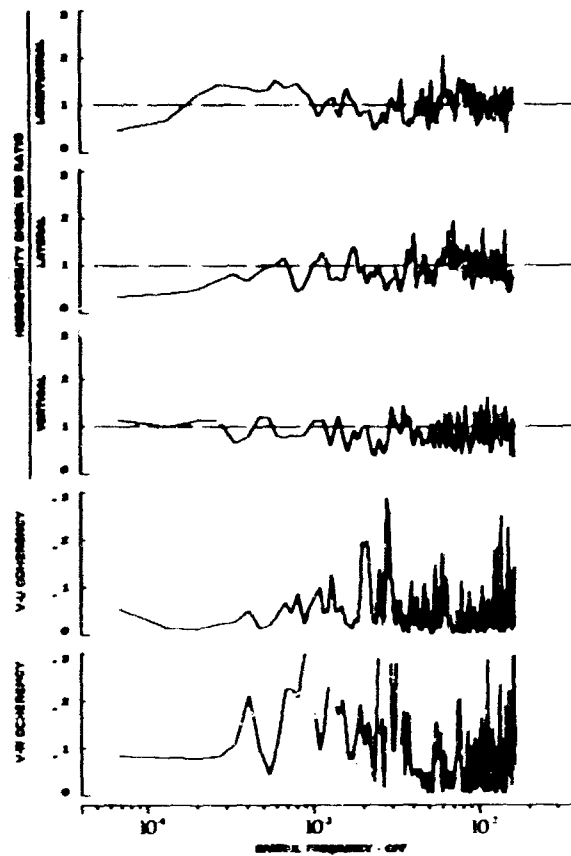
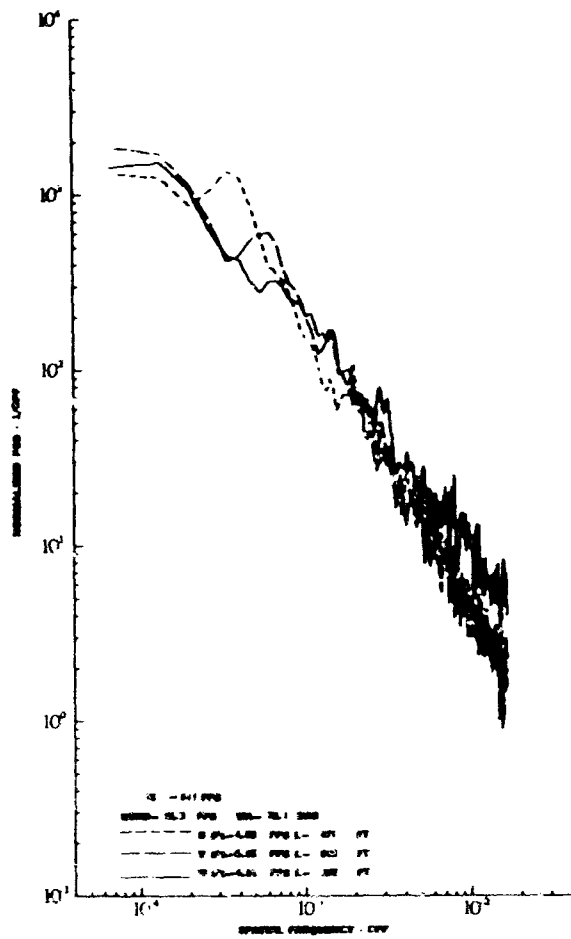


Turbulence Spectra Data For Test 153, Leg 3, Category 123243



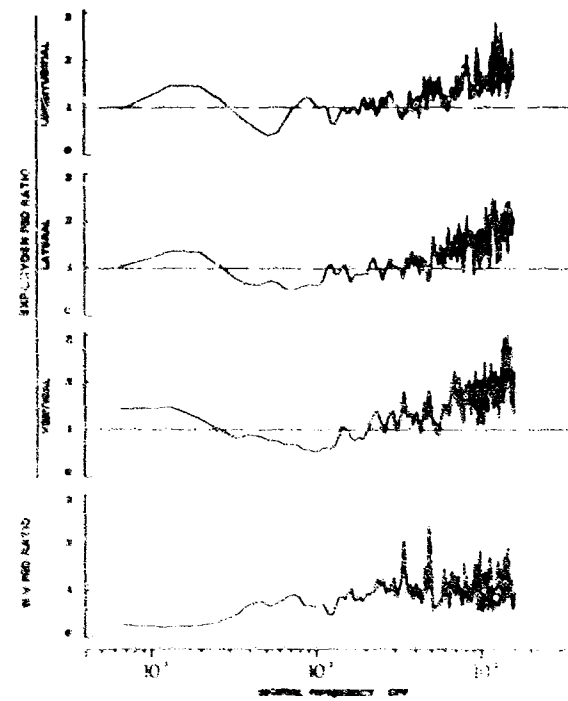
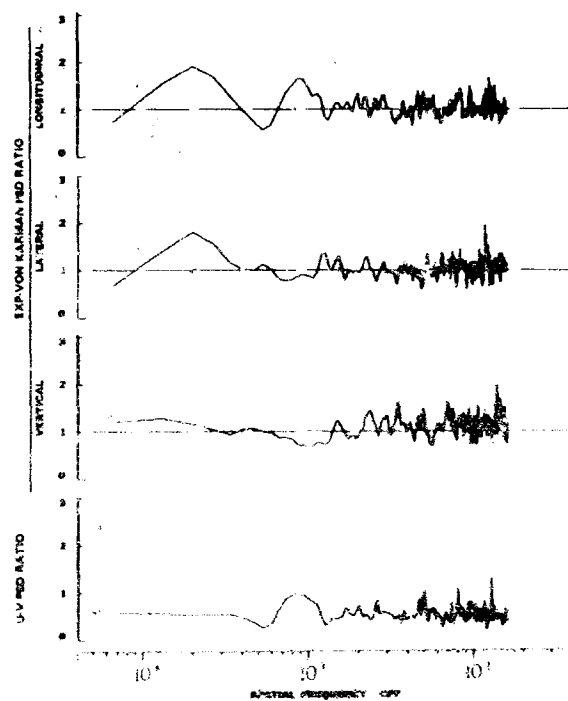
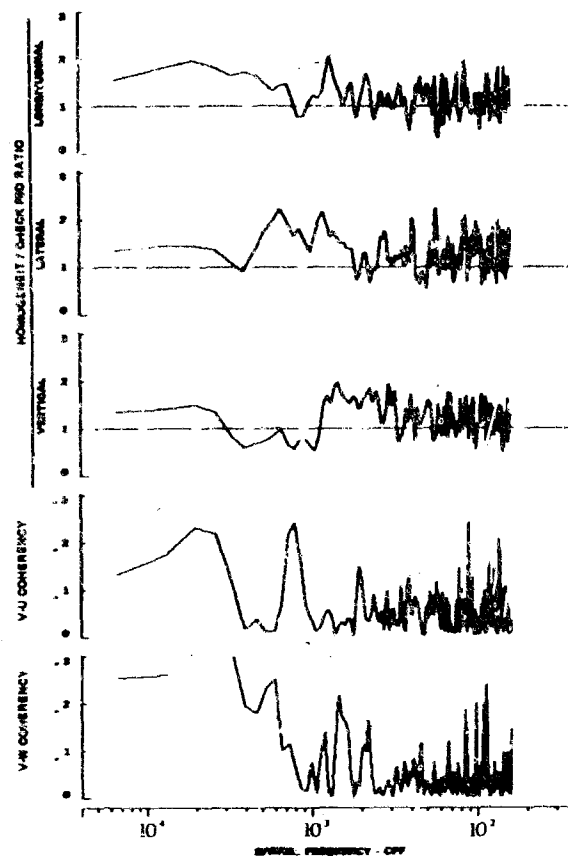
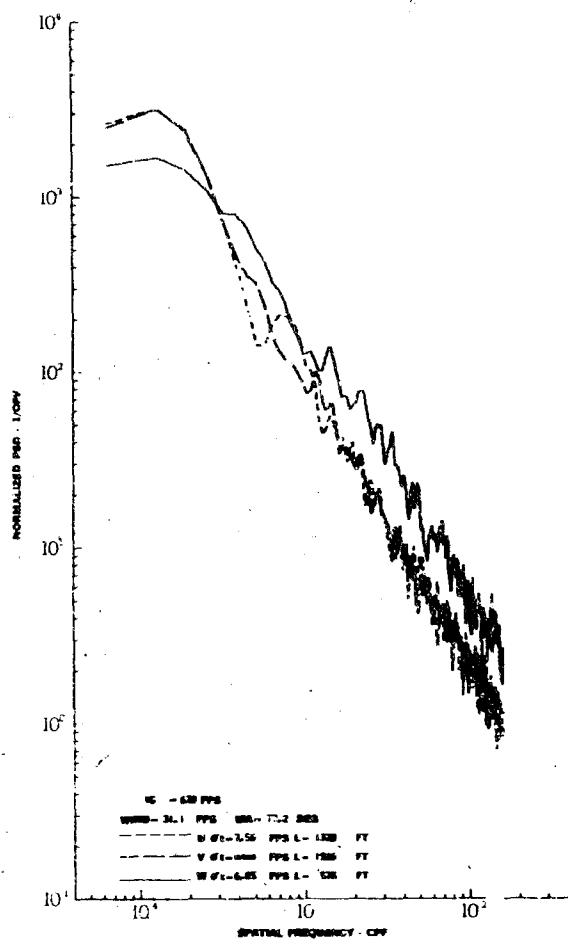
Turbulence Spectra Data For Test 154, Leg 4, Category 121143



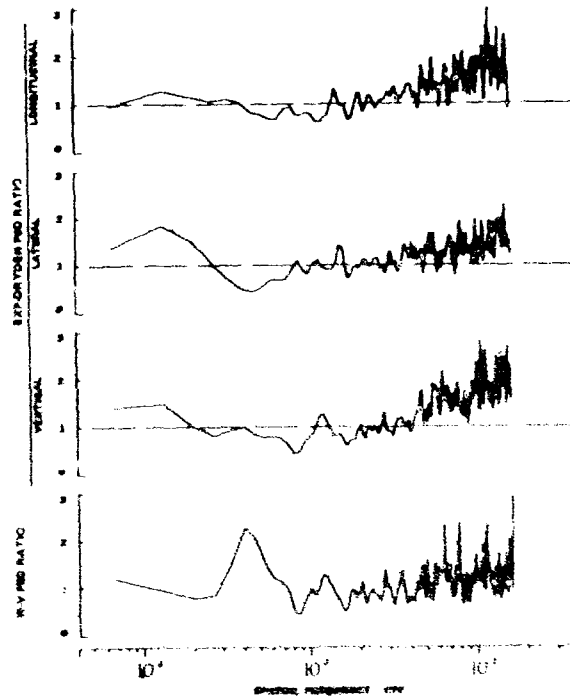
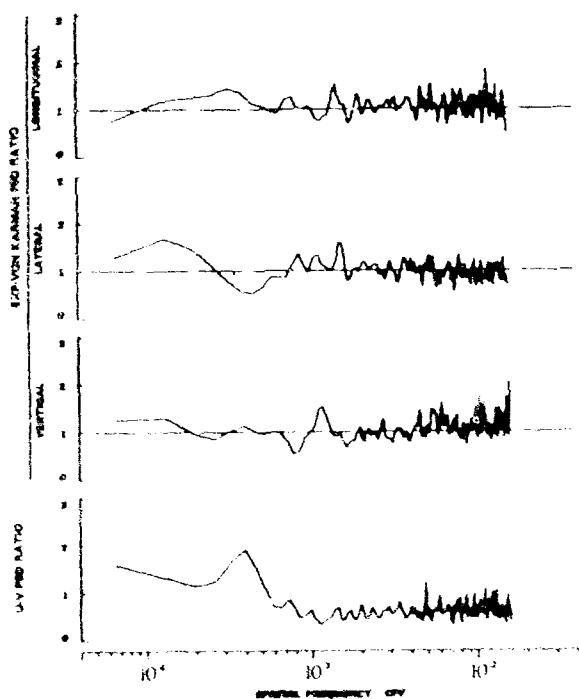
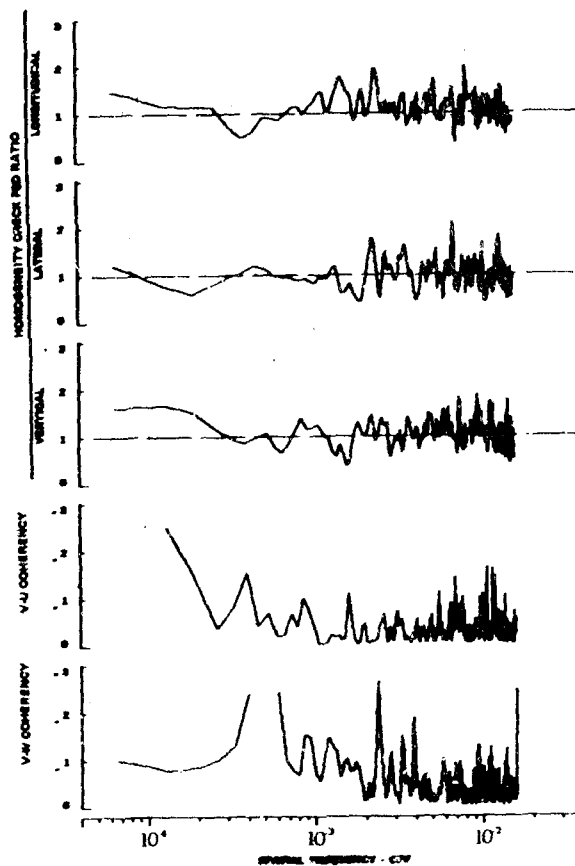
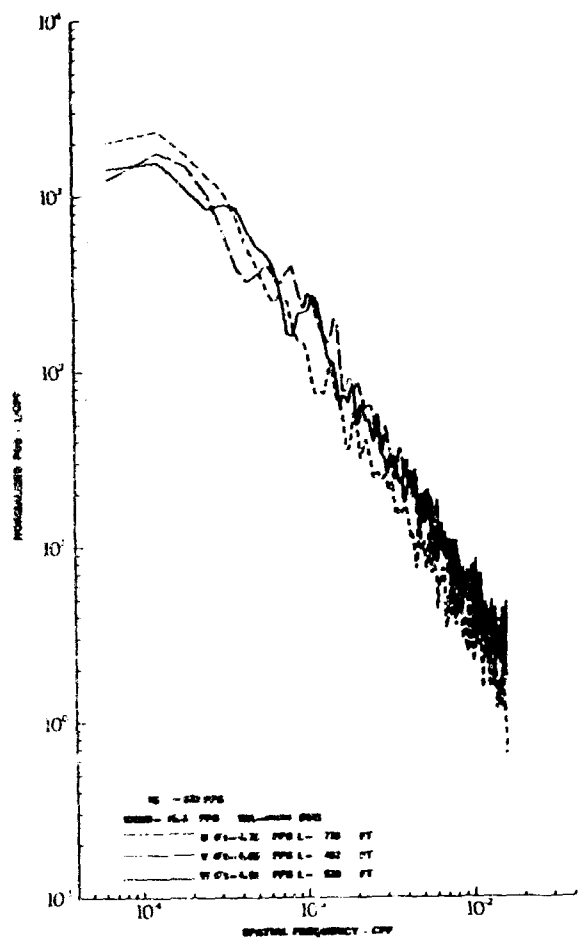


Turbulence Spectra Data for Test 155, Log 1, Category 122243



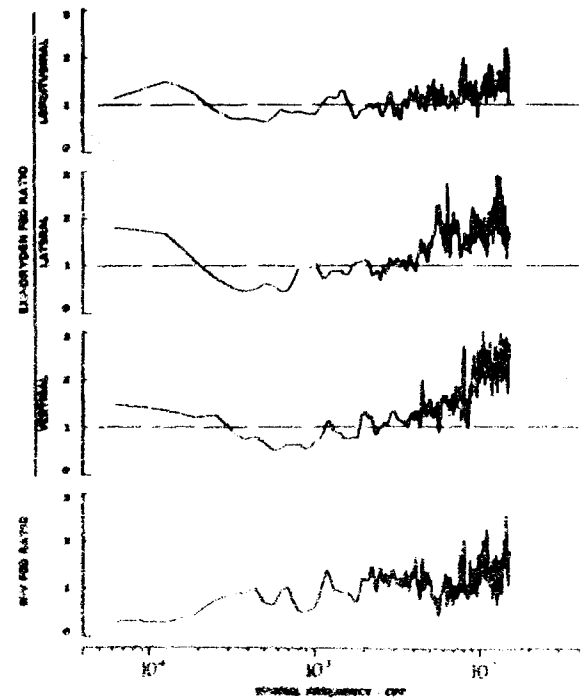
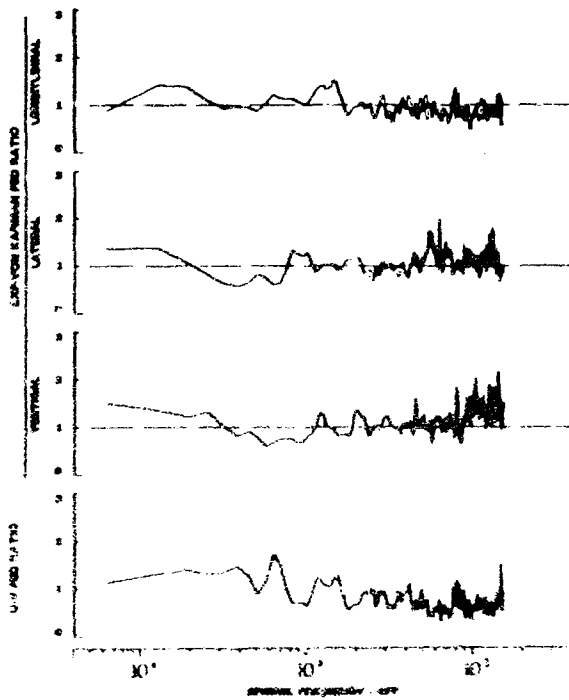
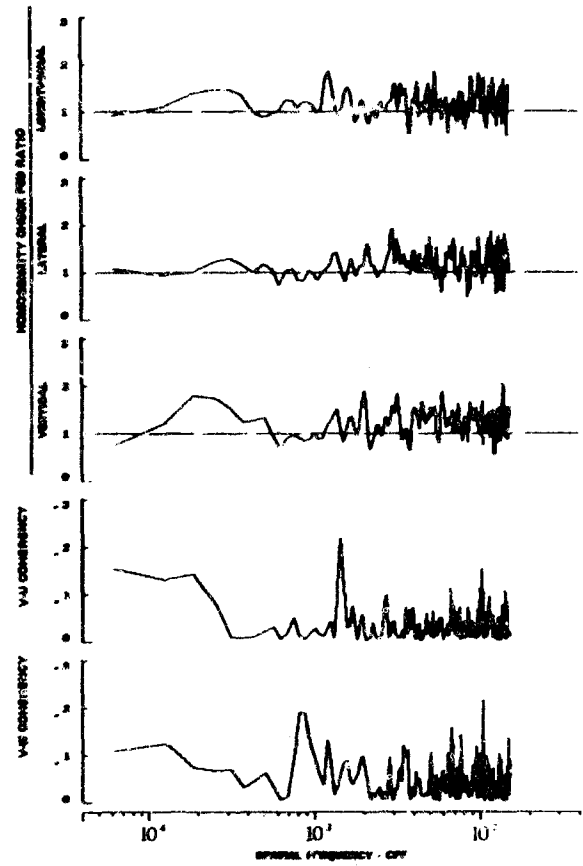
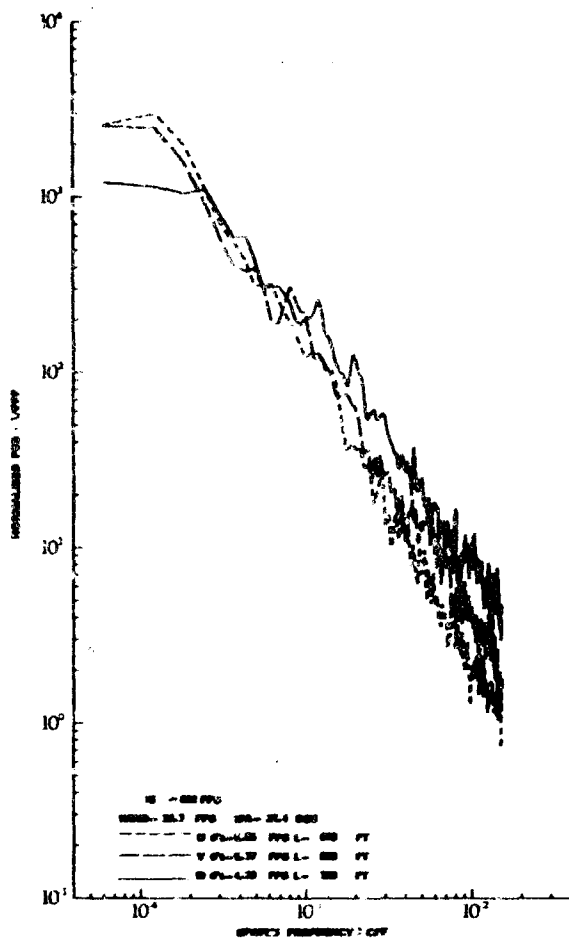


Turbulence Spectra Data For Test 155, Leg 7, Category 122243

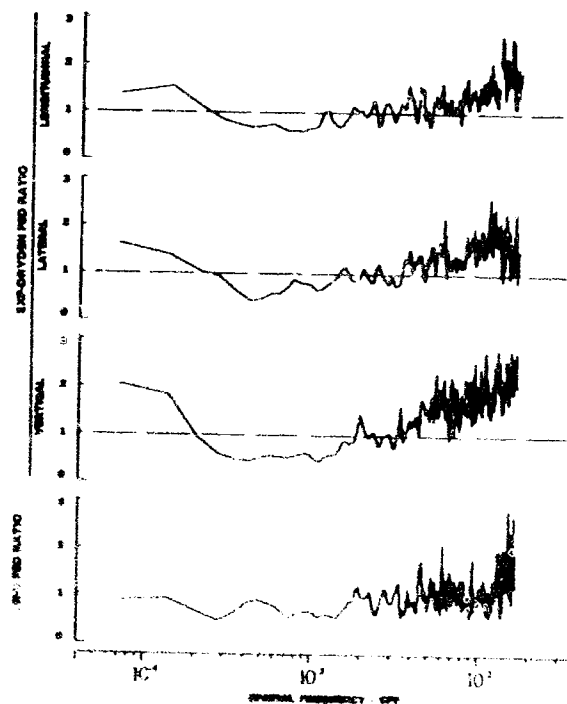
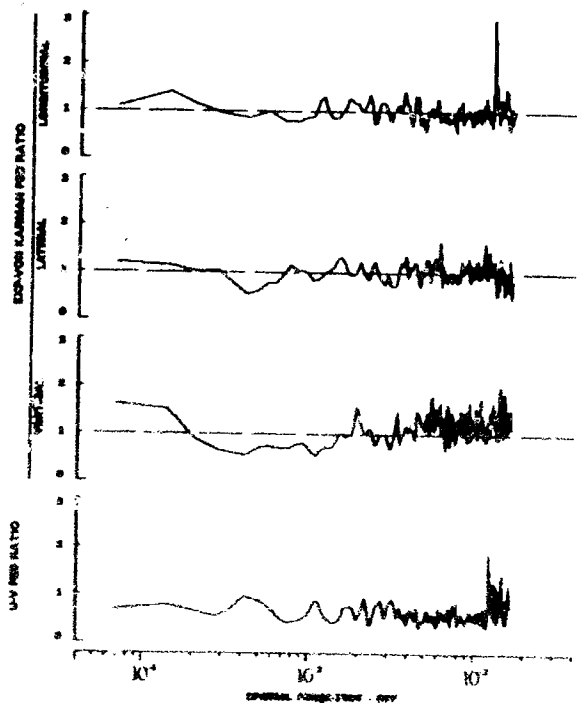
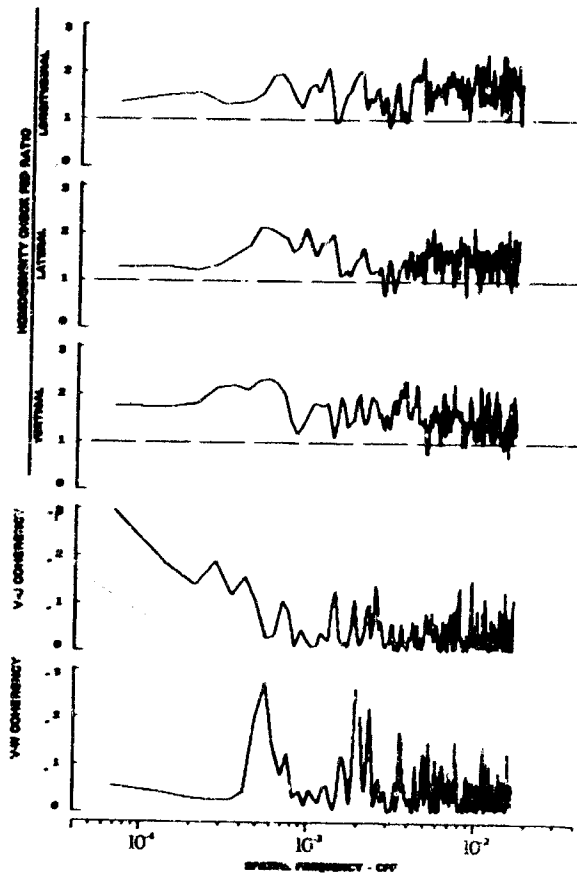
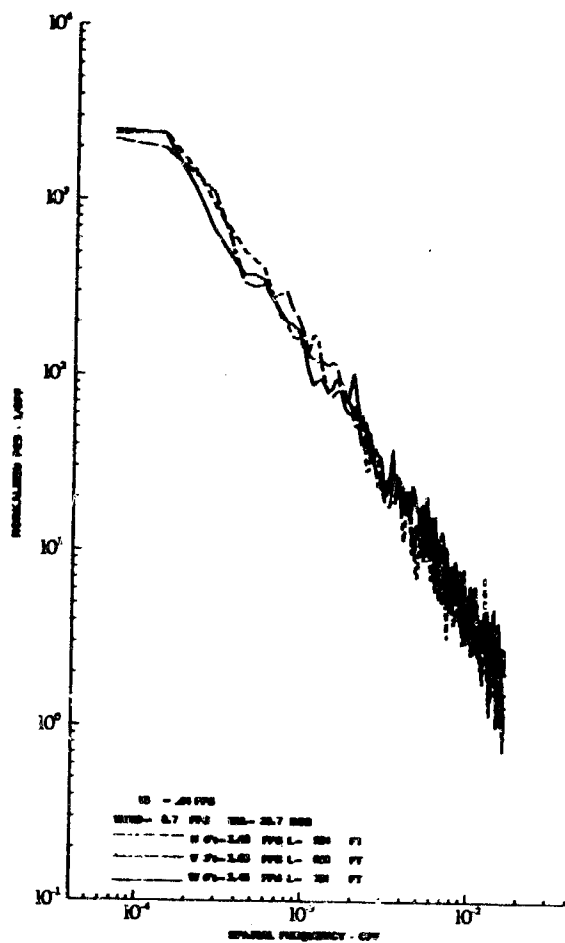


Turbulence Spectra Data For Test 156, Leg A, Category 123434



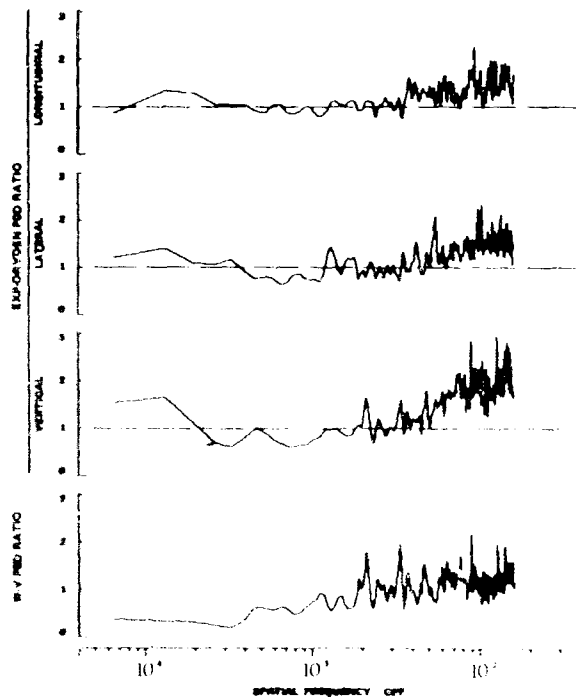
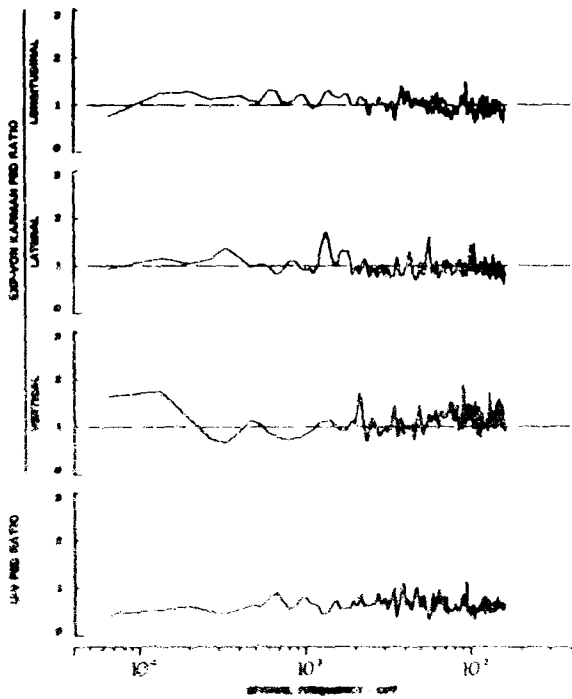
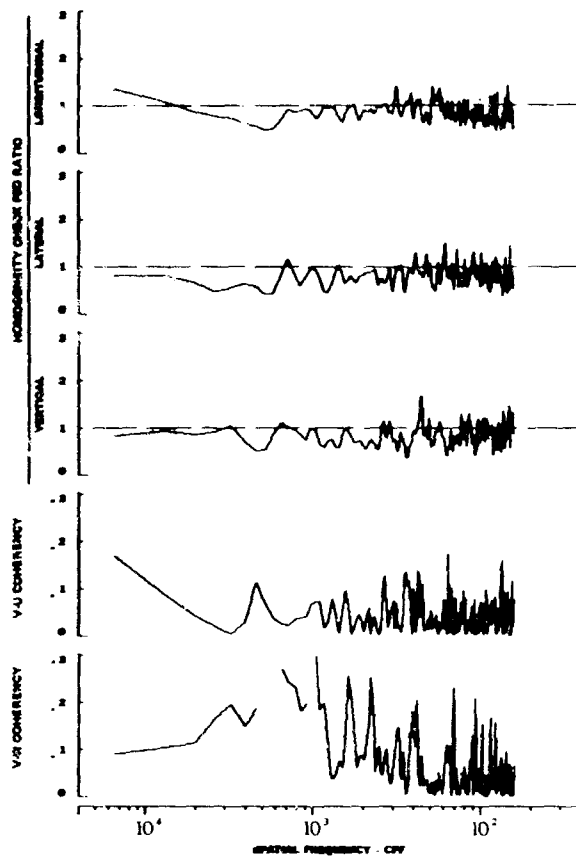
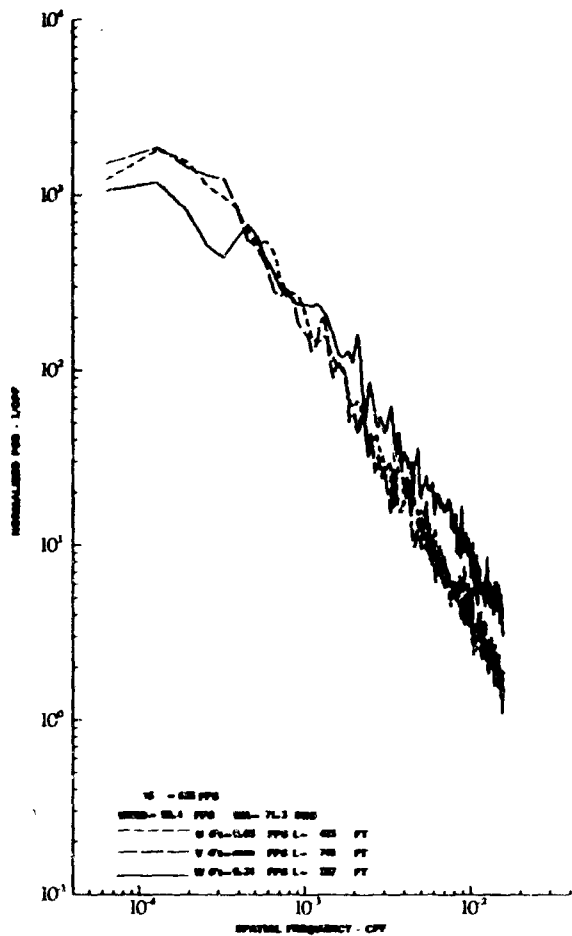


Turbulence Spectra Data For Test 156, Leg 6, Category 122343

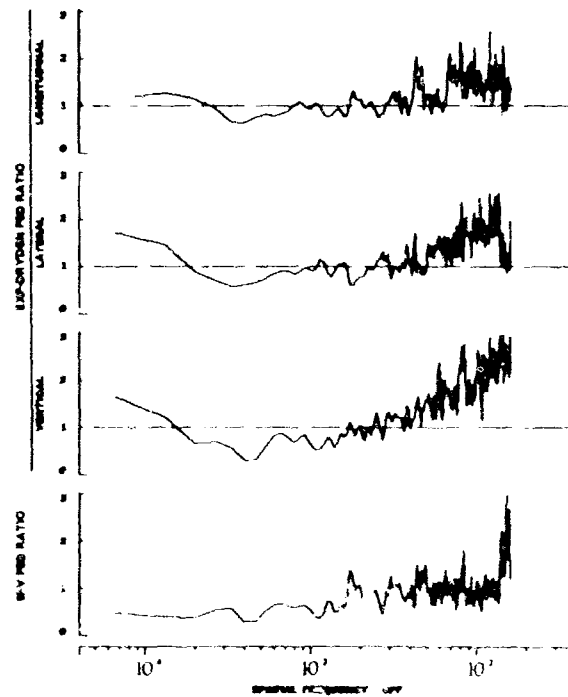
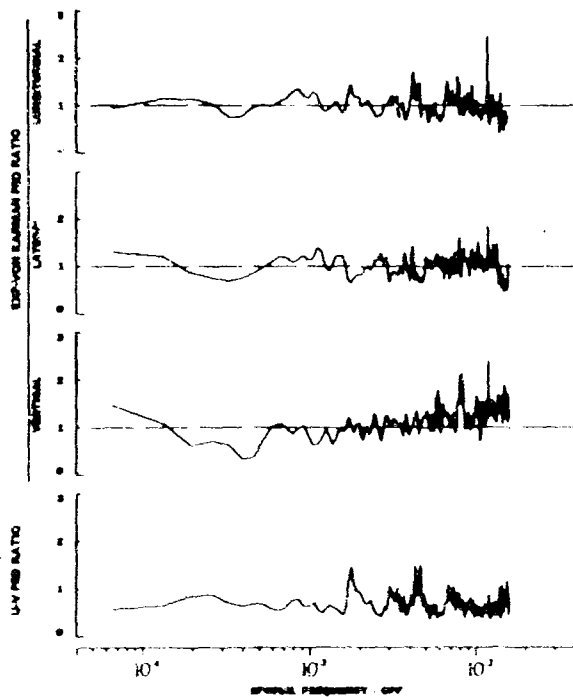
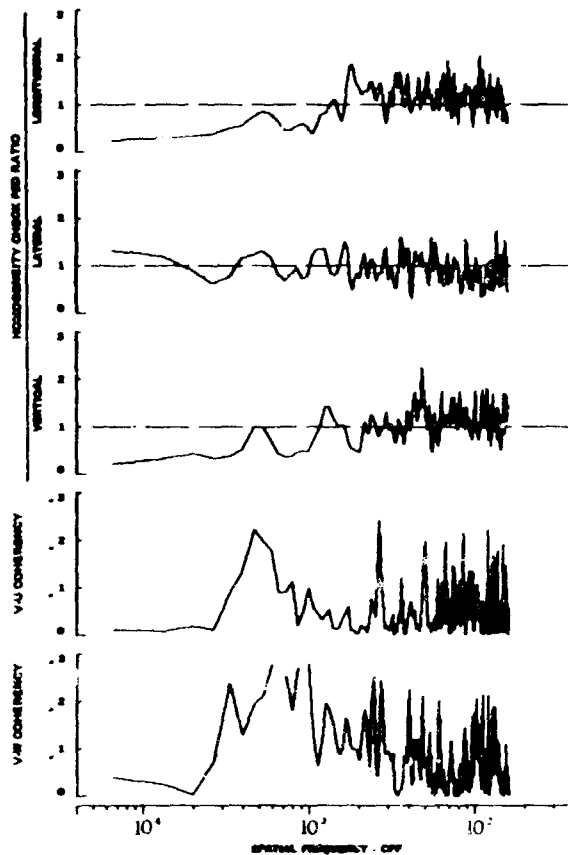
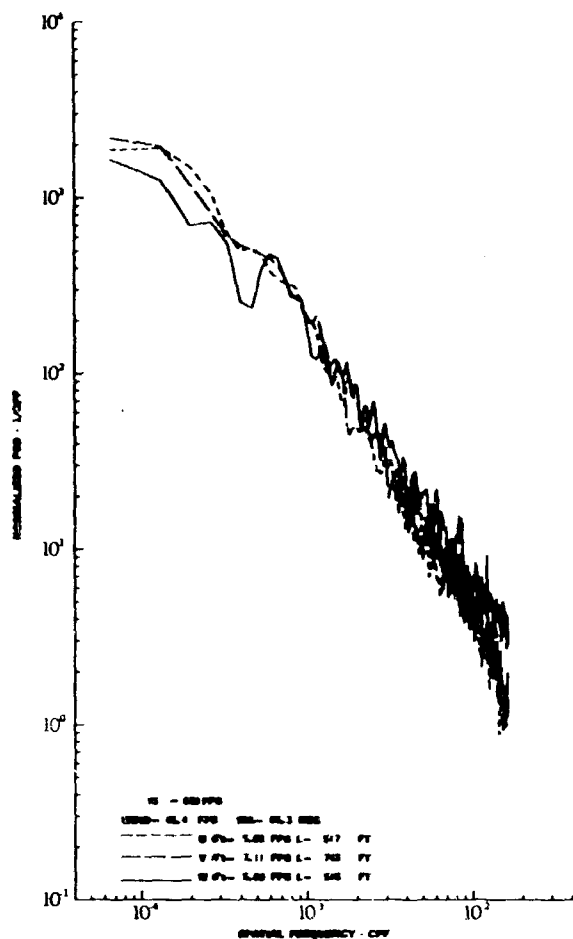


Turbulence Spectra Data For Test 158, Leg 2, Category 11-243

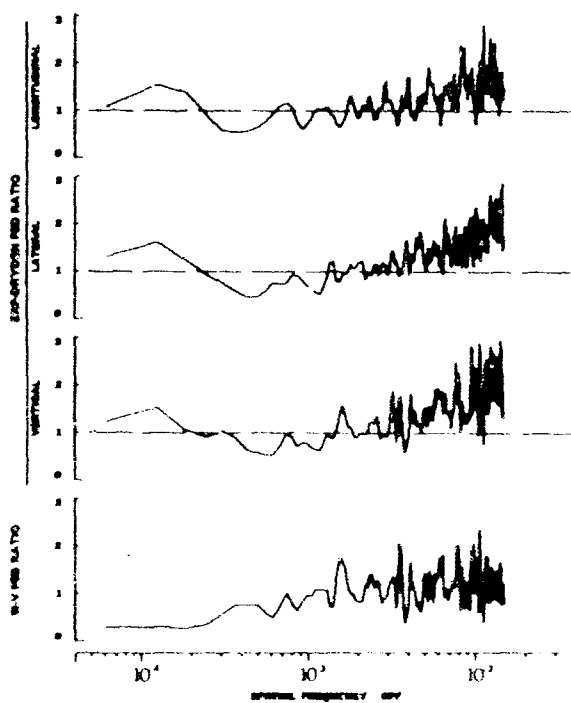
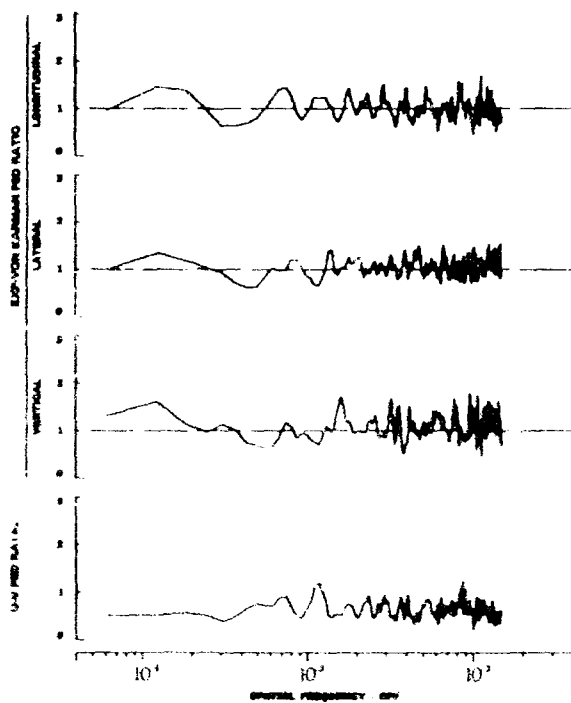
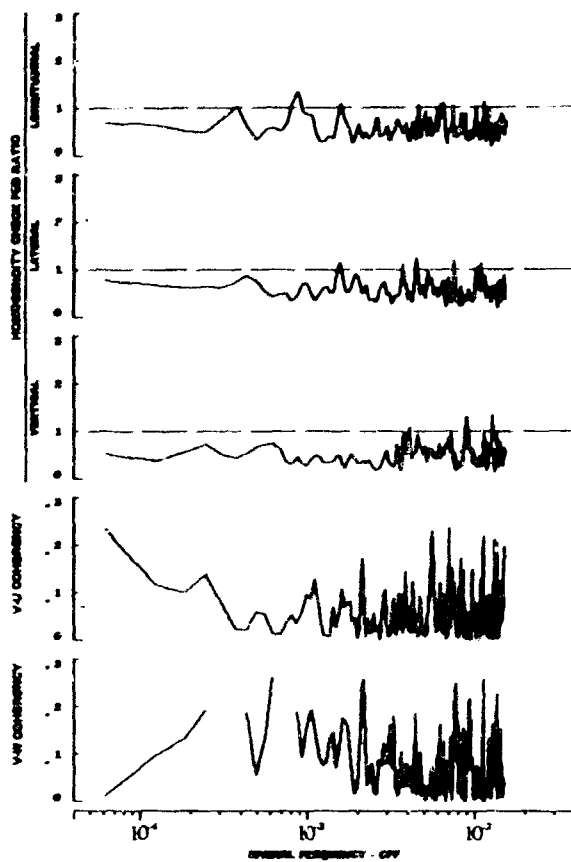
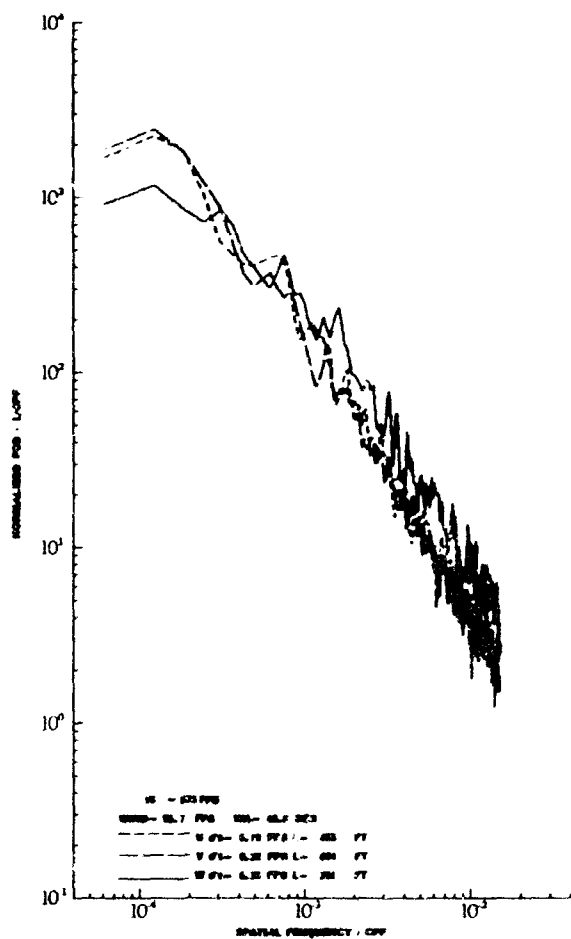




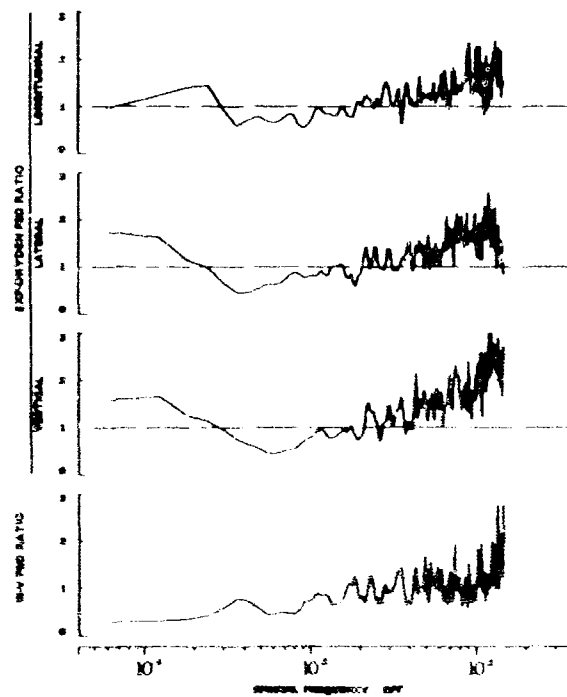
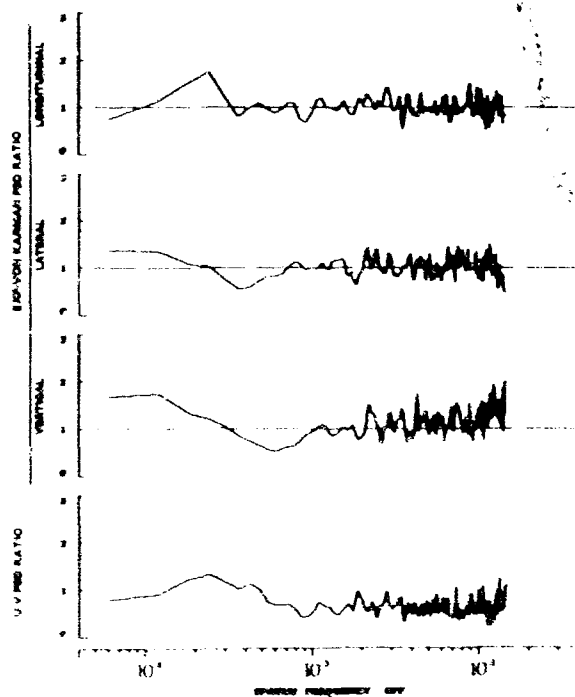
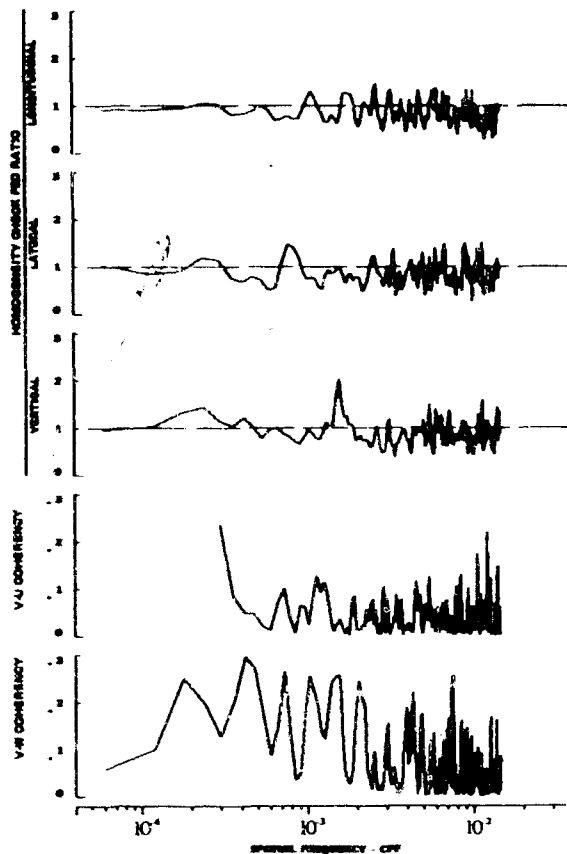
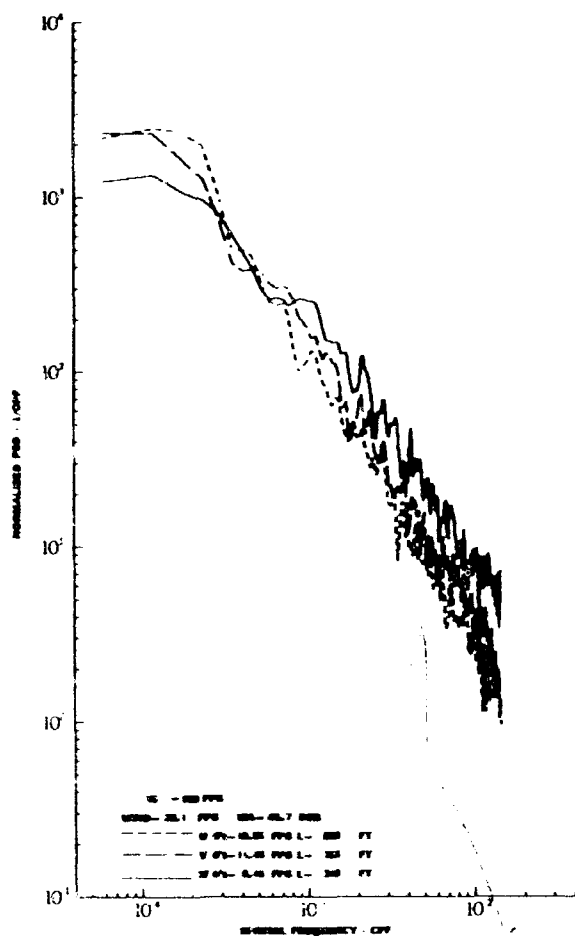
Turbulence Spectra Data For Test 158, Leg 6, Category 113243



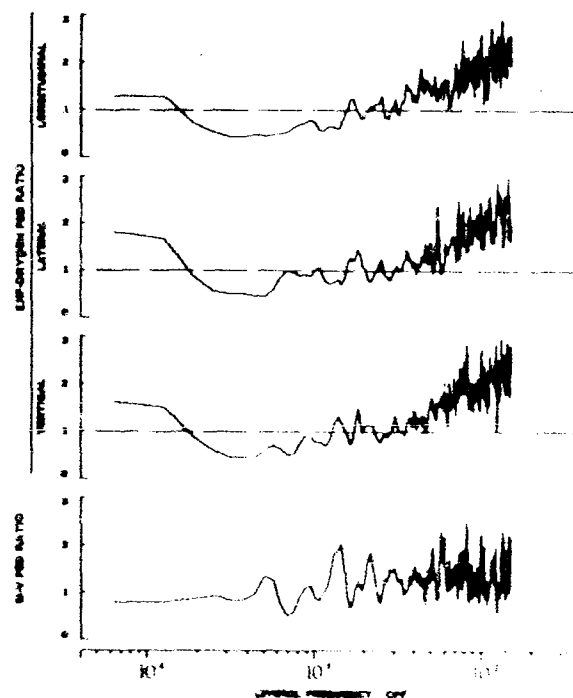
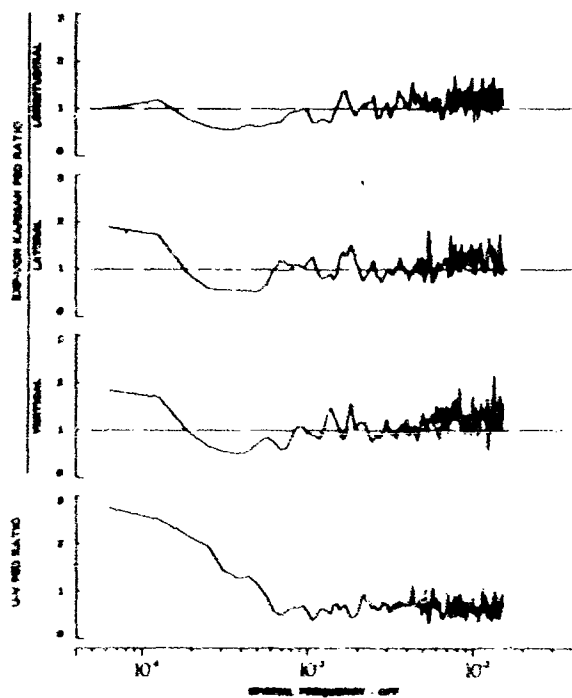
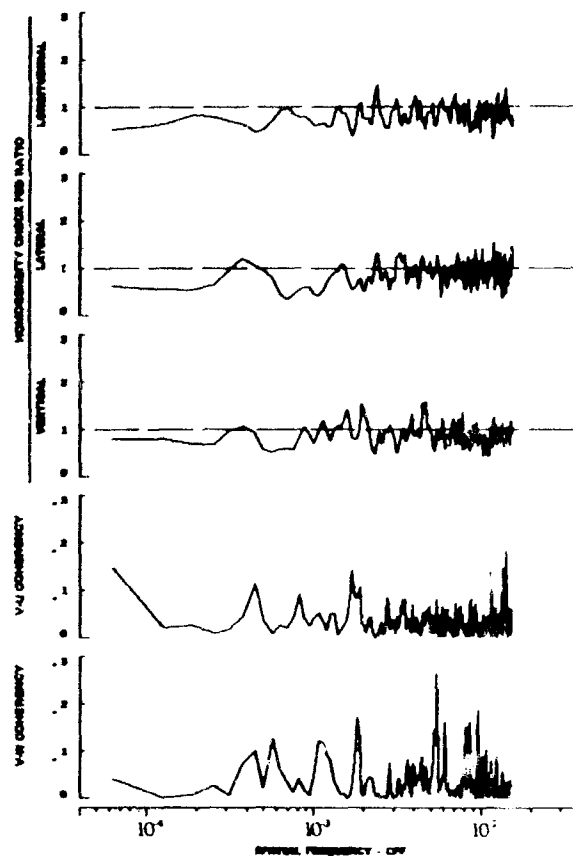
Turbulence Spectre Data For Test 159, Leg 1, Category 121143



Turbulence Spectra Data For Test 159, Log 7, Category 122143



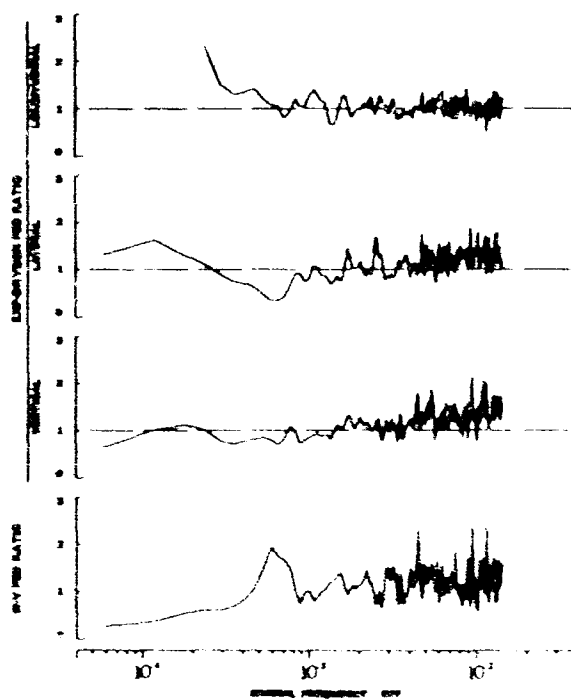
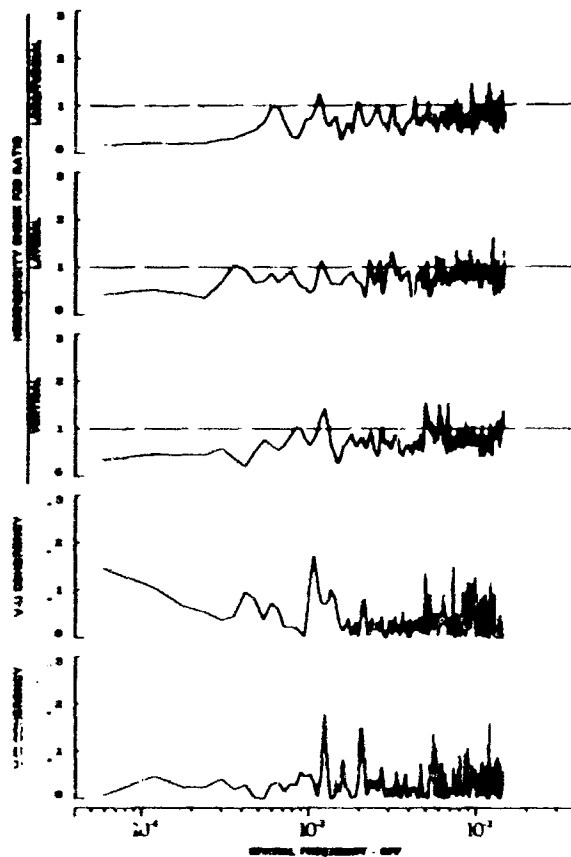
Turbulence Spectra Data For Test 160, Leg 6, Category 114783

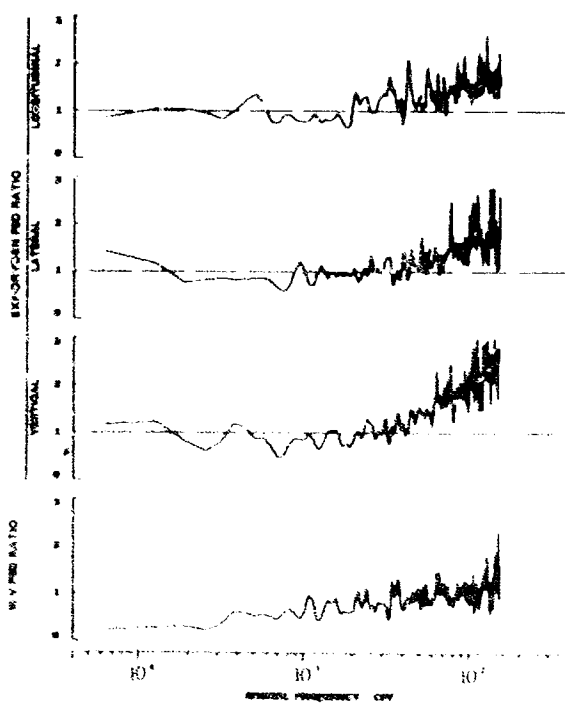
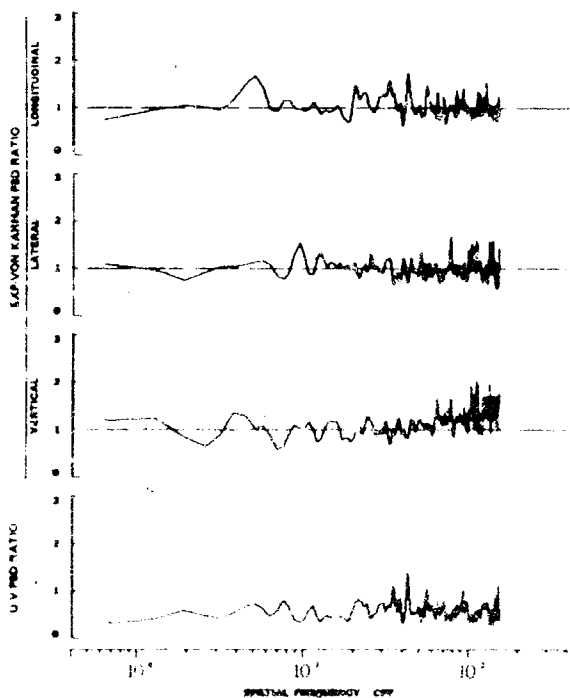
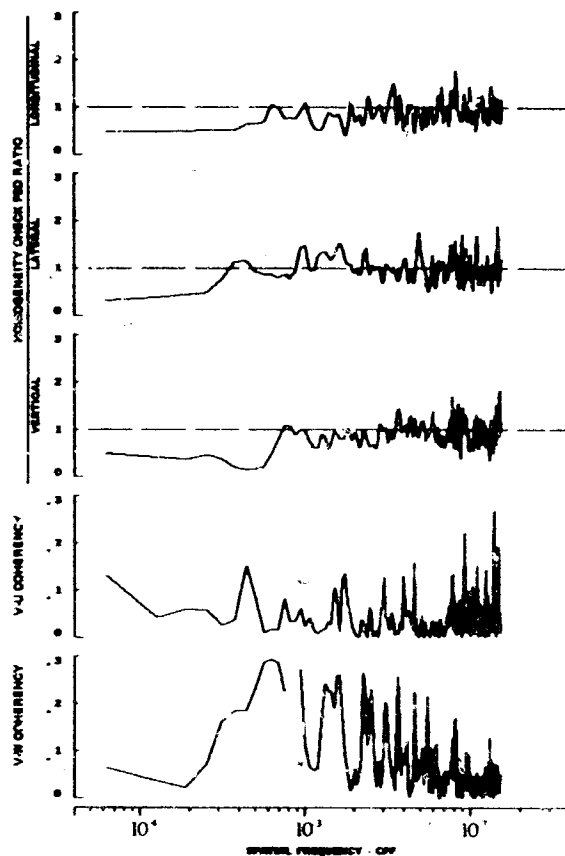
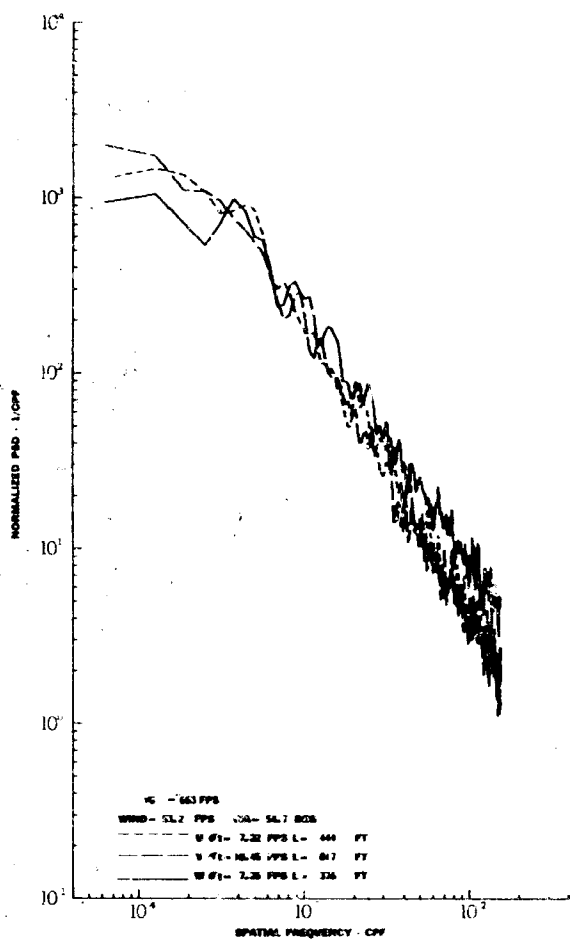


Turbulence Spectra Data For Test 160, Log 8, Category 413243

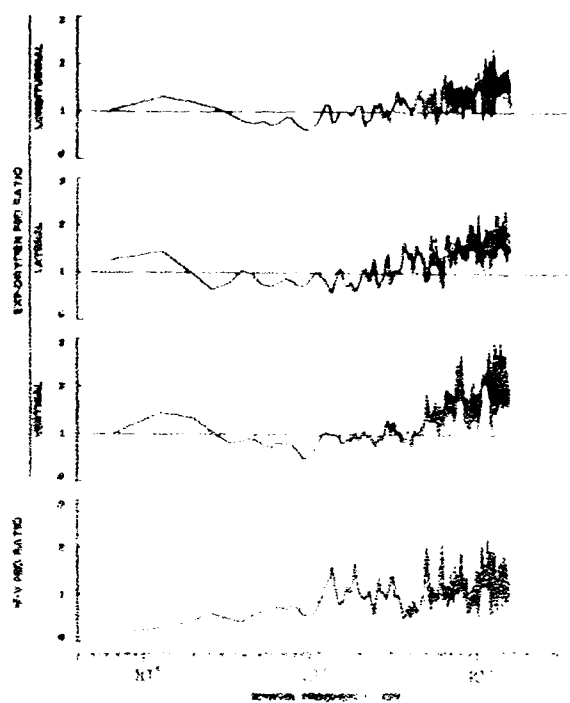
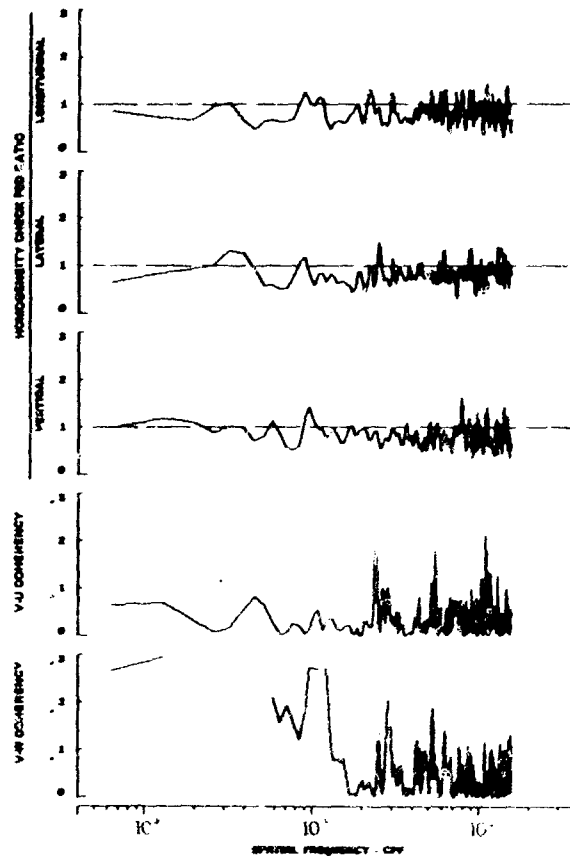


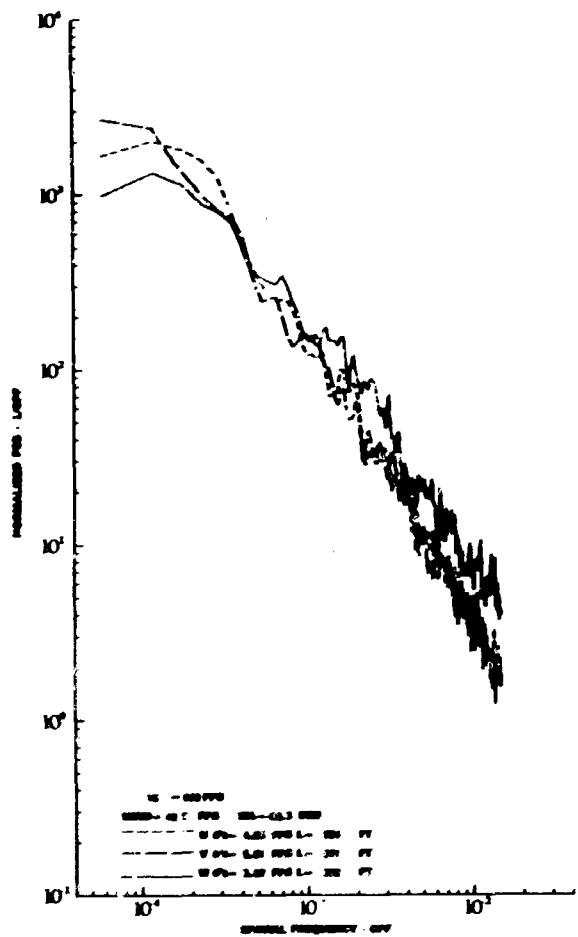






Turbulence Spectra Data For Test 162, Leg 6, Category 127143



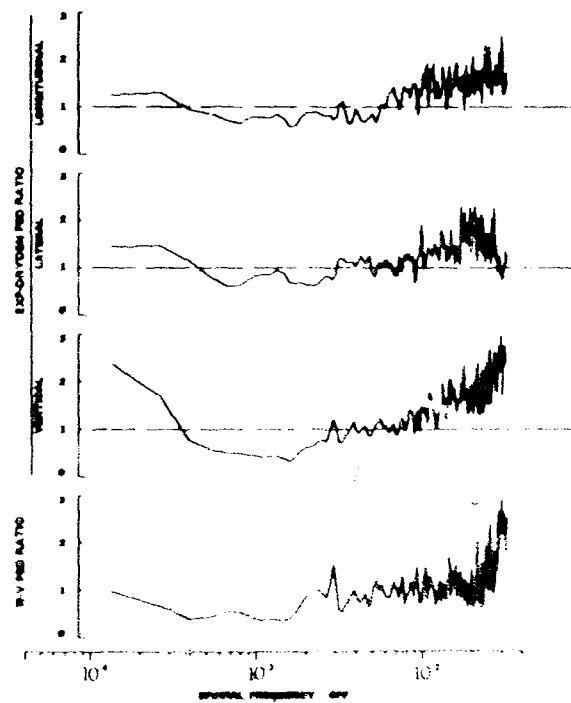
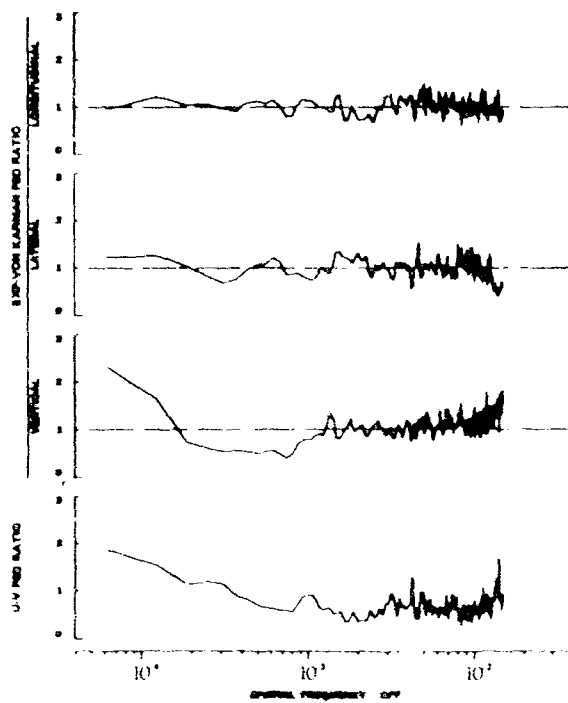
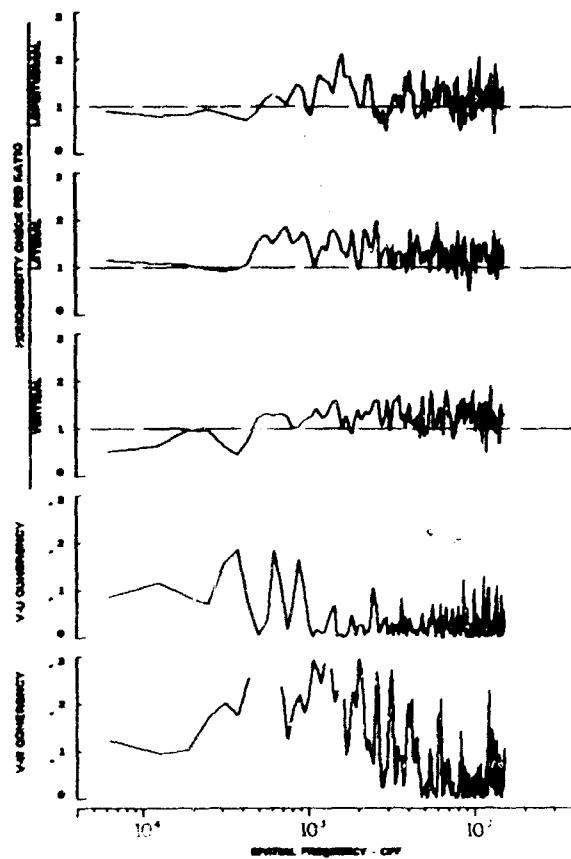


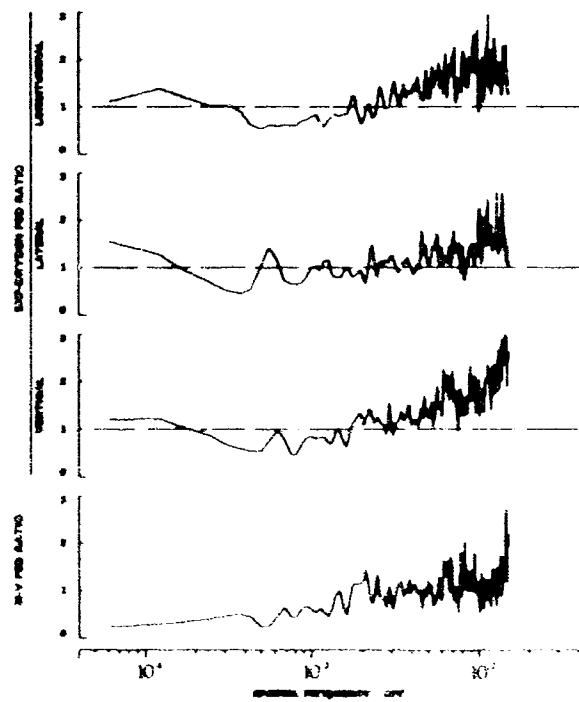
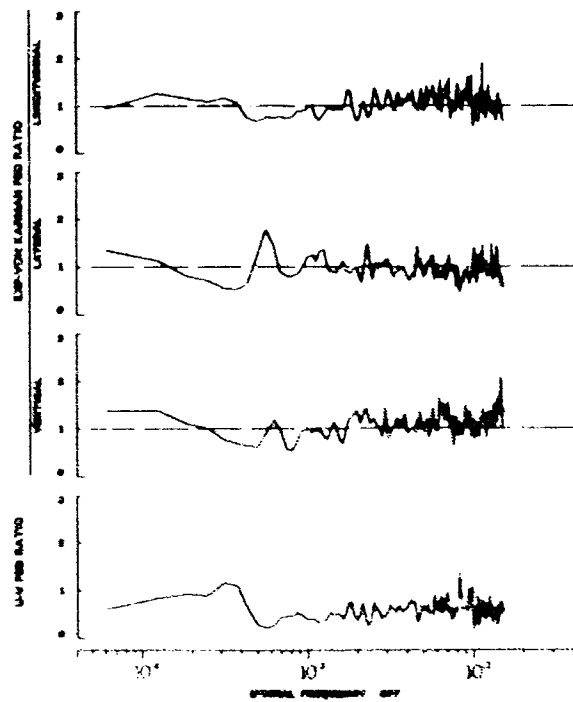
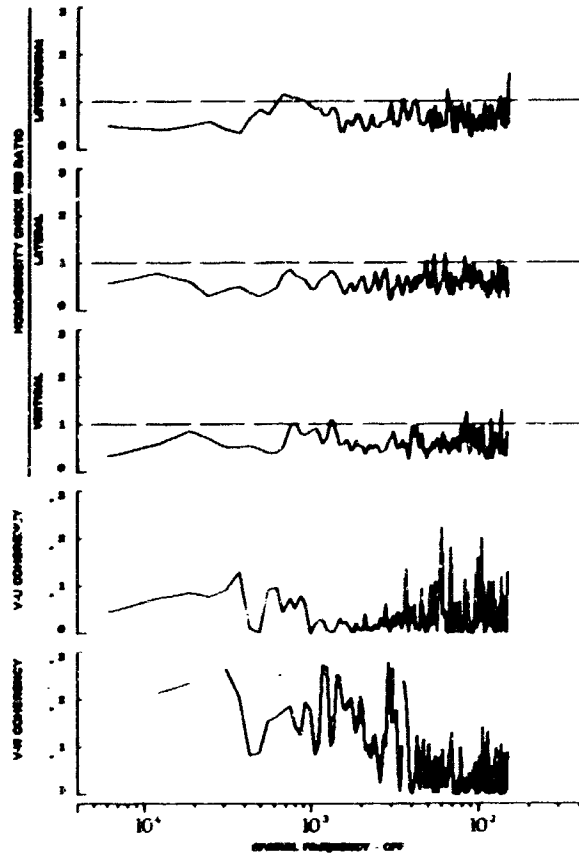
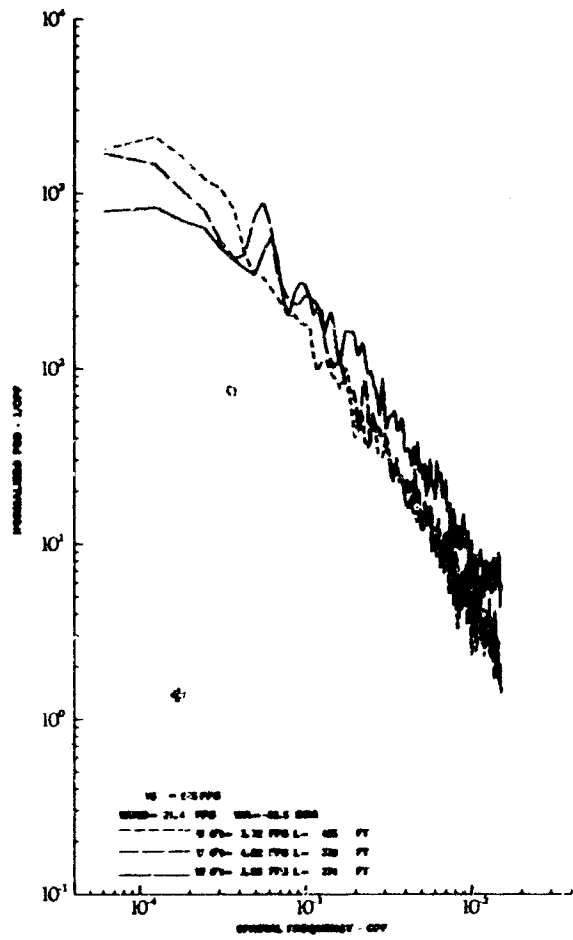




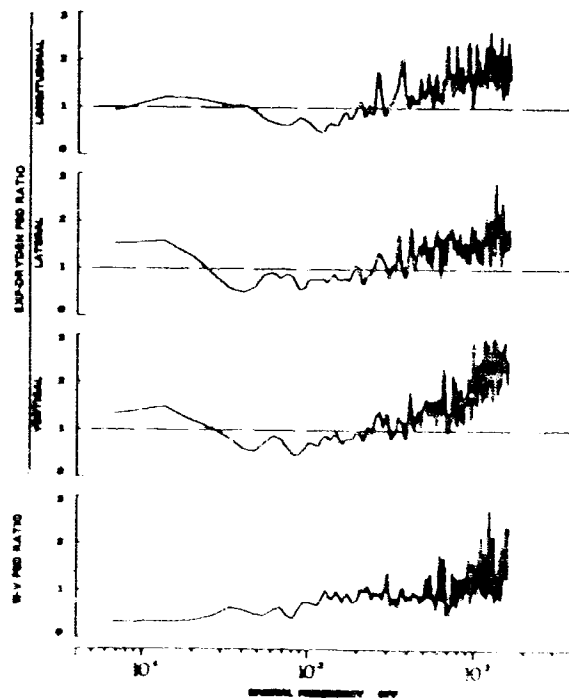
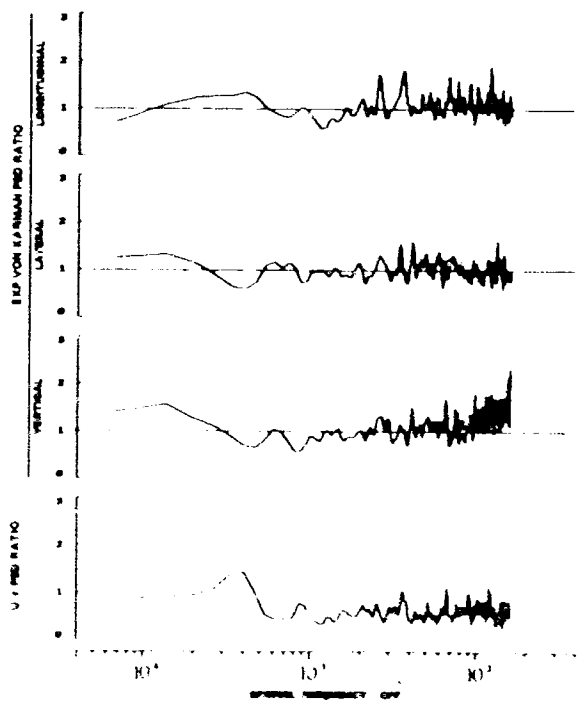
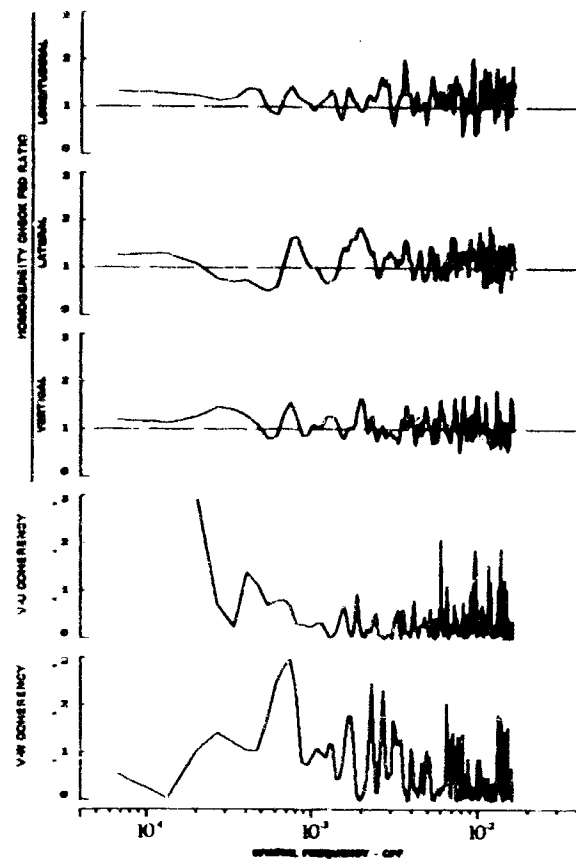
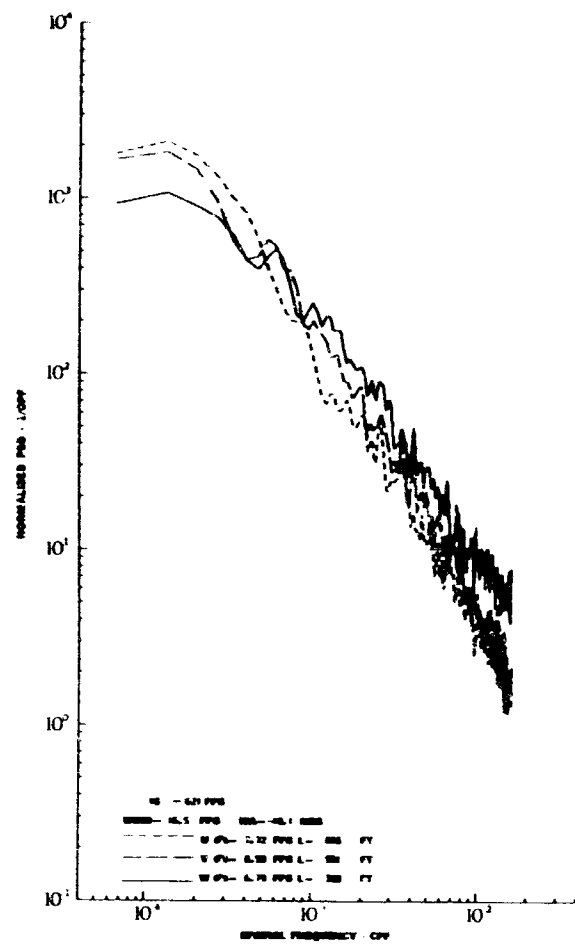




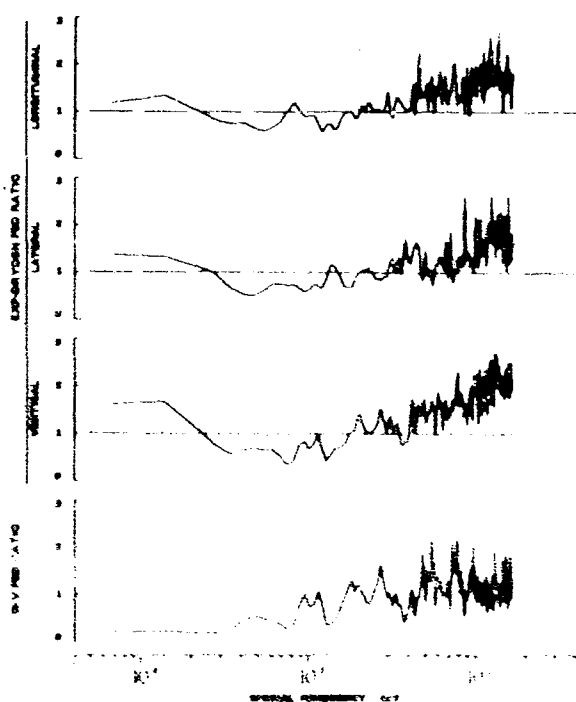
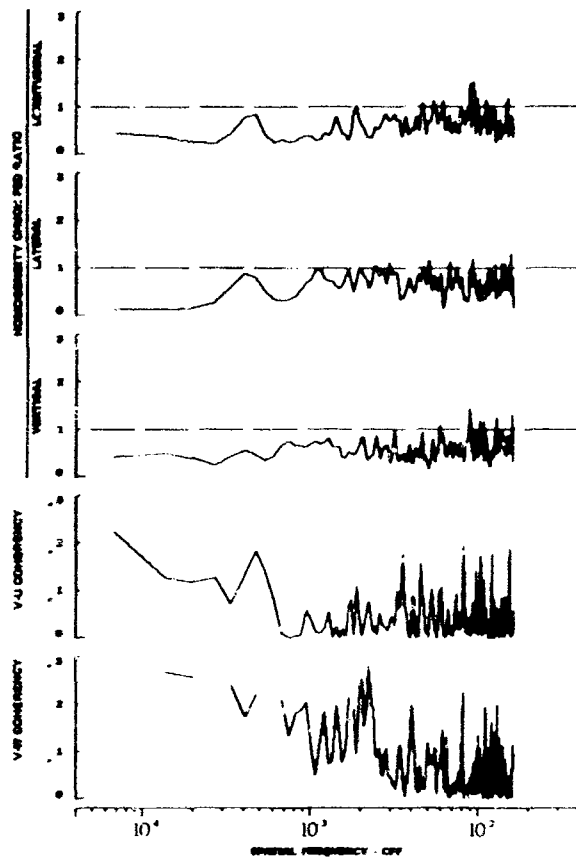


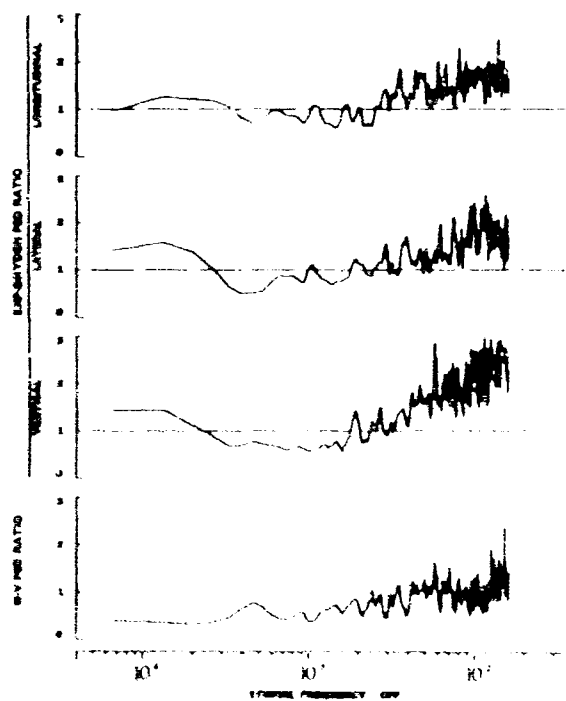
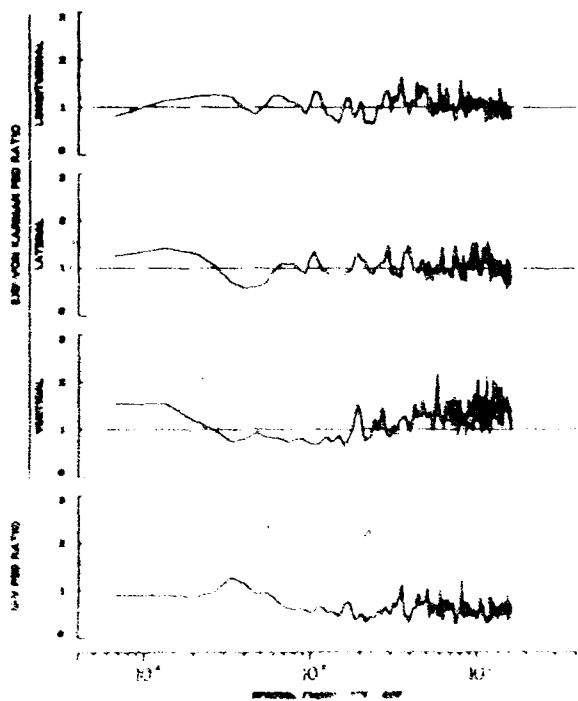
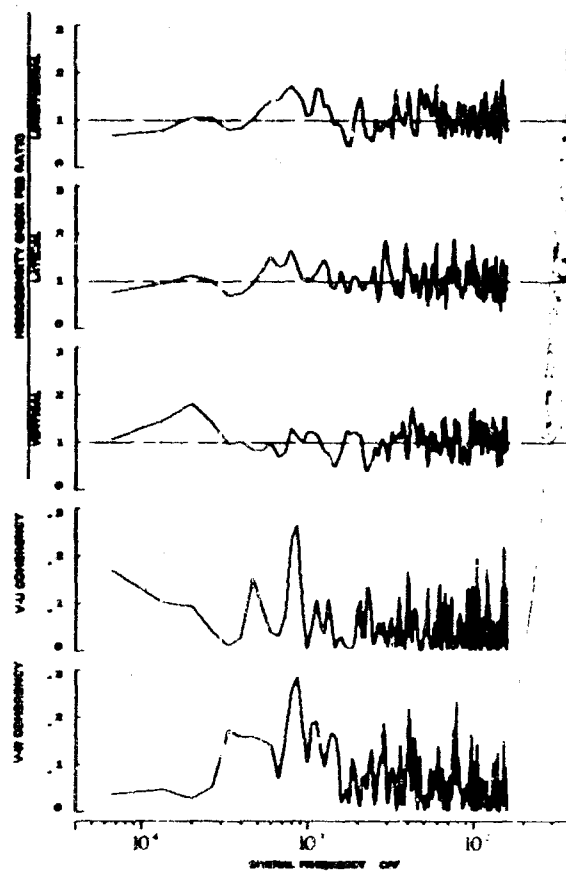


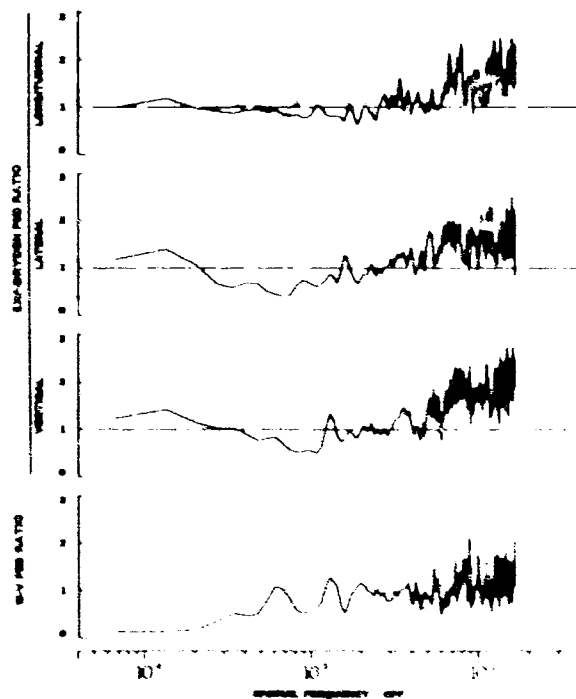
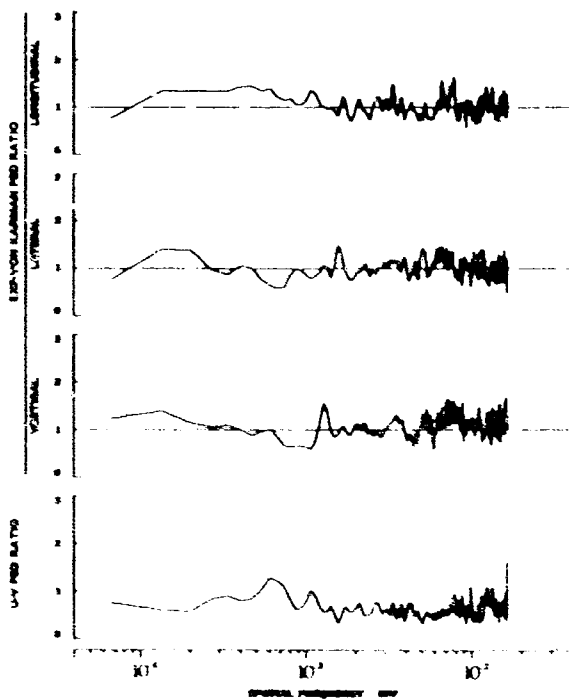
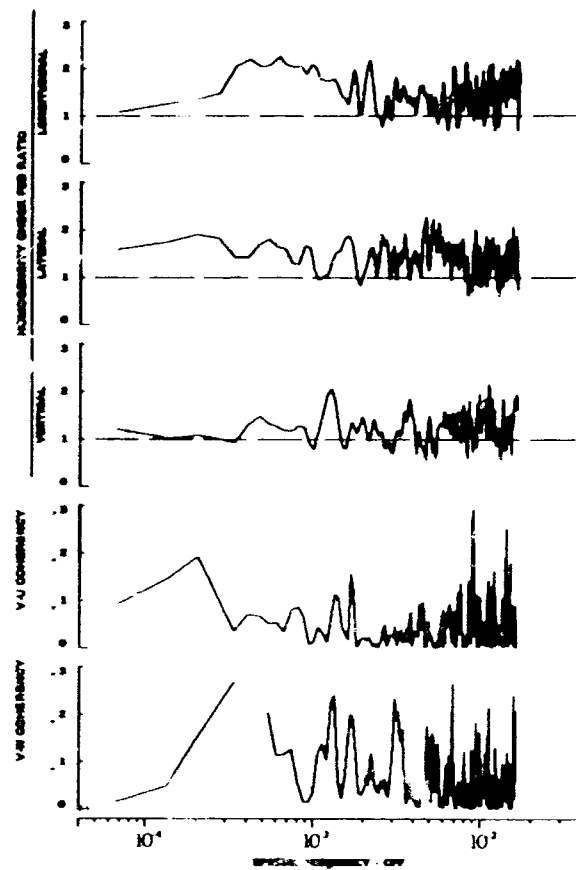
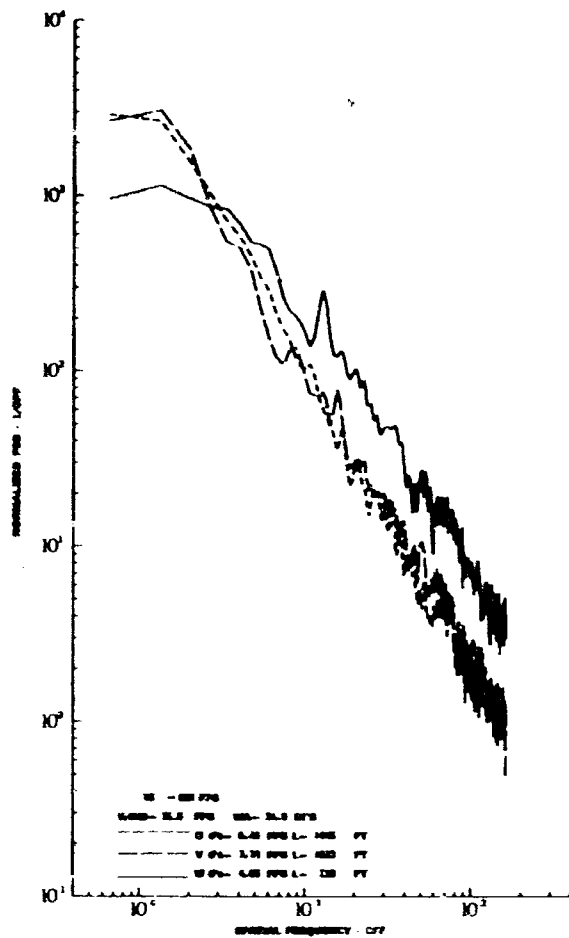
Turbulence Spectra Data For Test 167, Leg 3, Category 111343



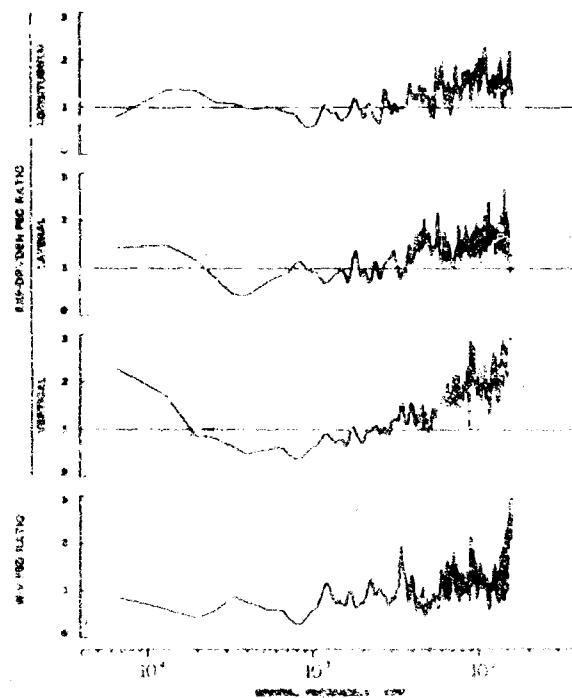
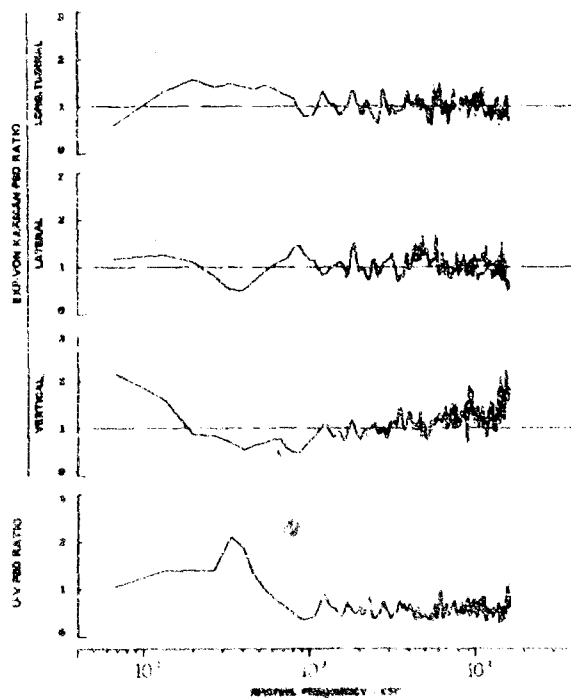
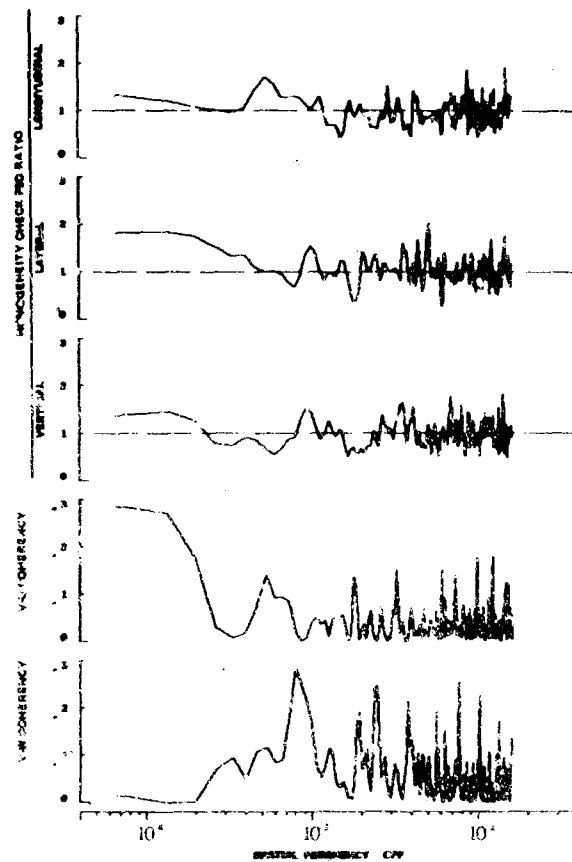
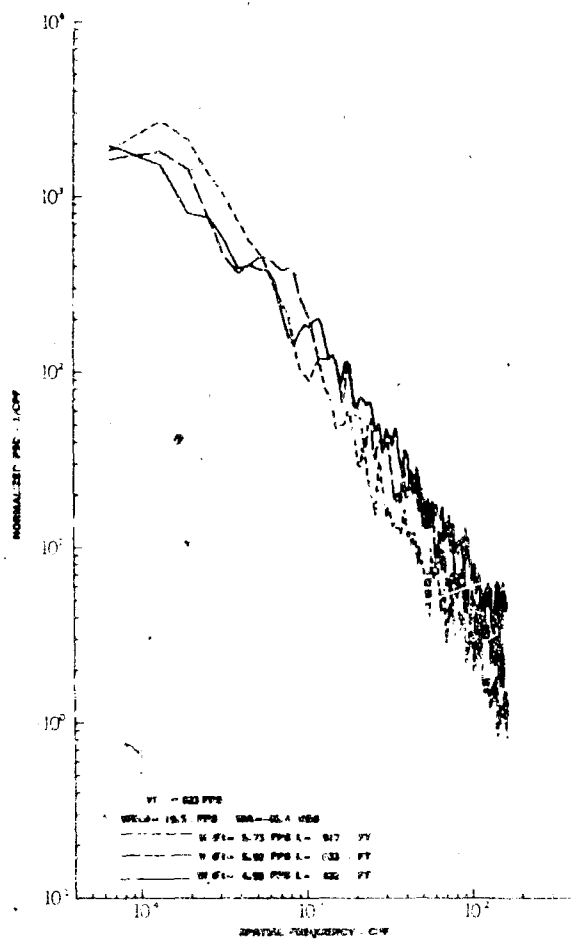
Turbulence Spectra Data For Test 167, Leg 5, Category 112343



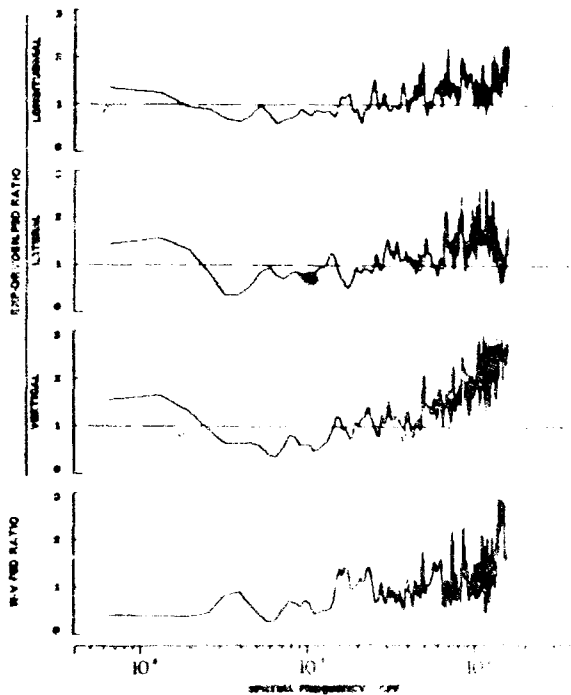
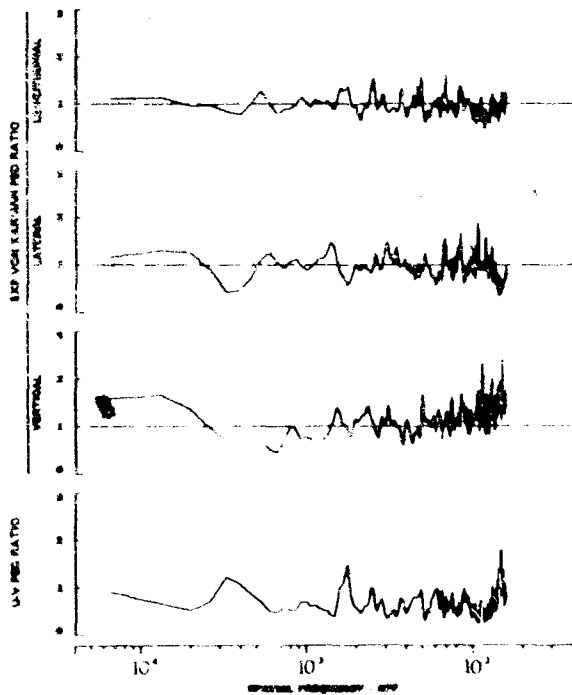
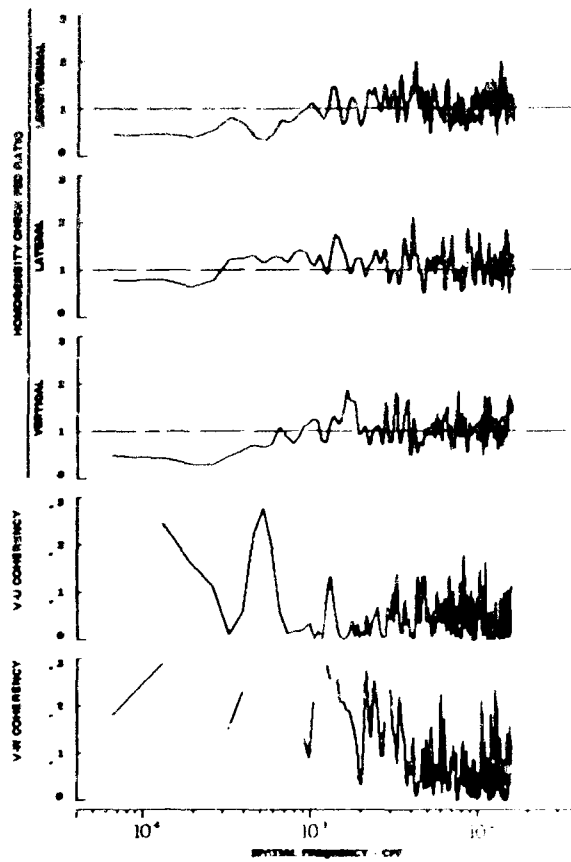
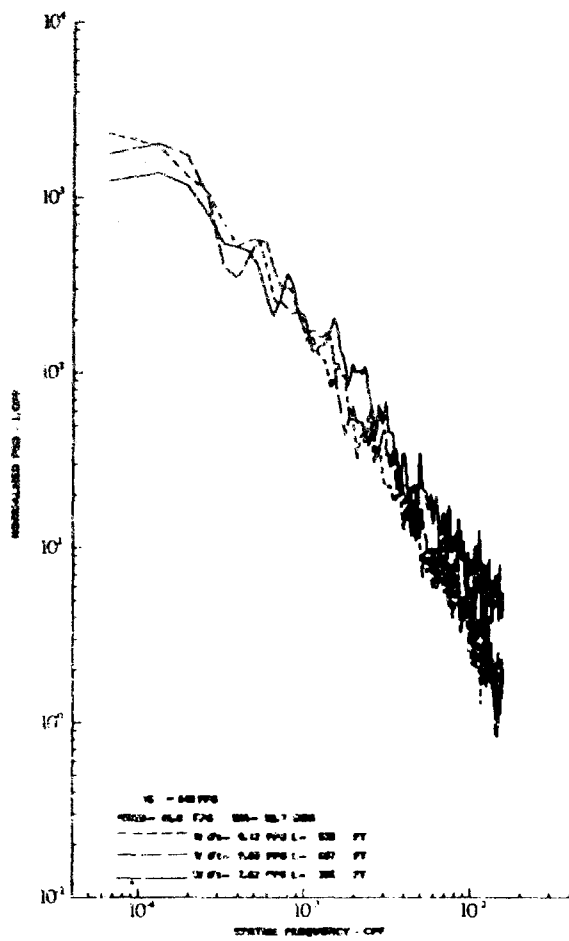




Turbulence Spectra Data for Test 168, Leg 6, Category 127143

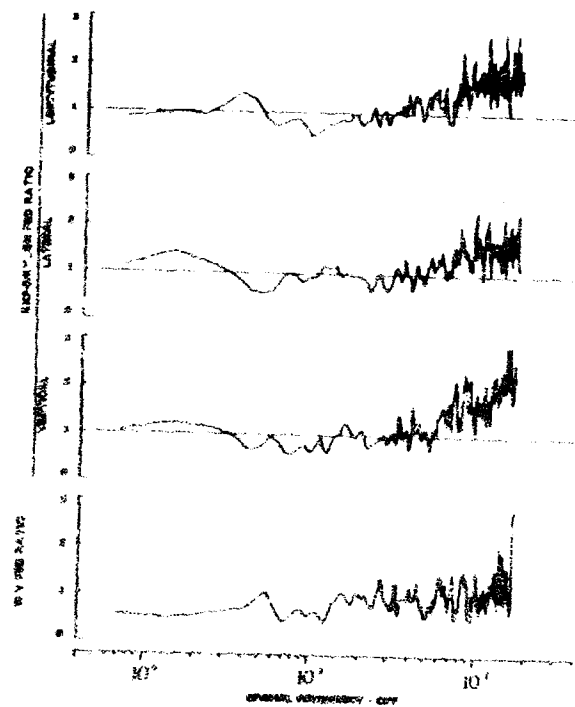
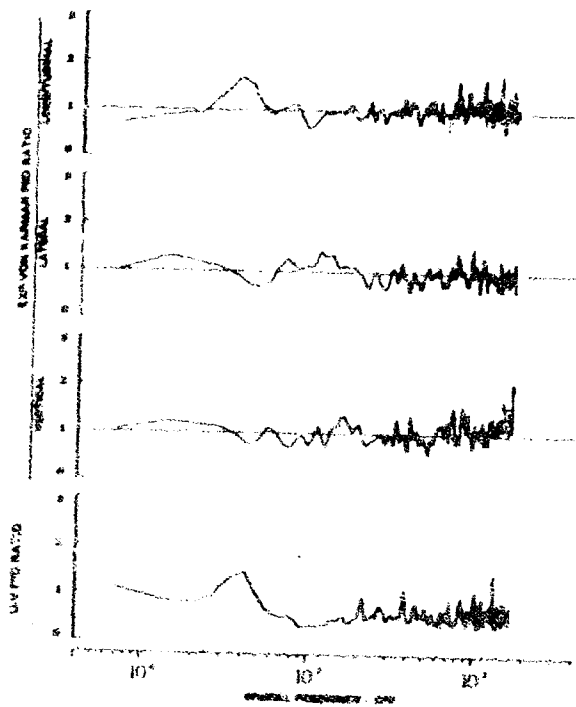
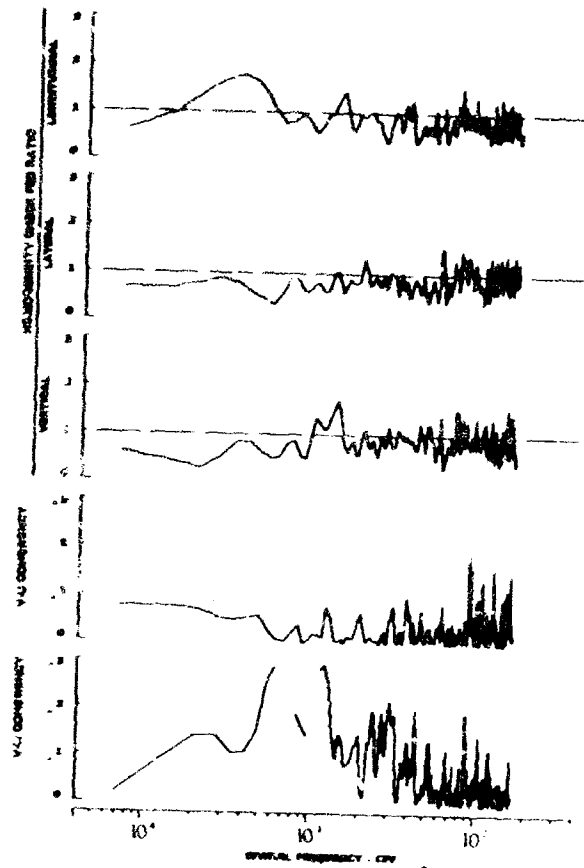
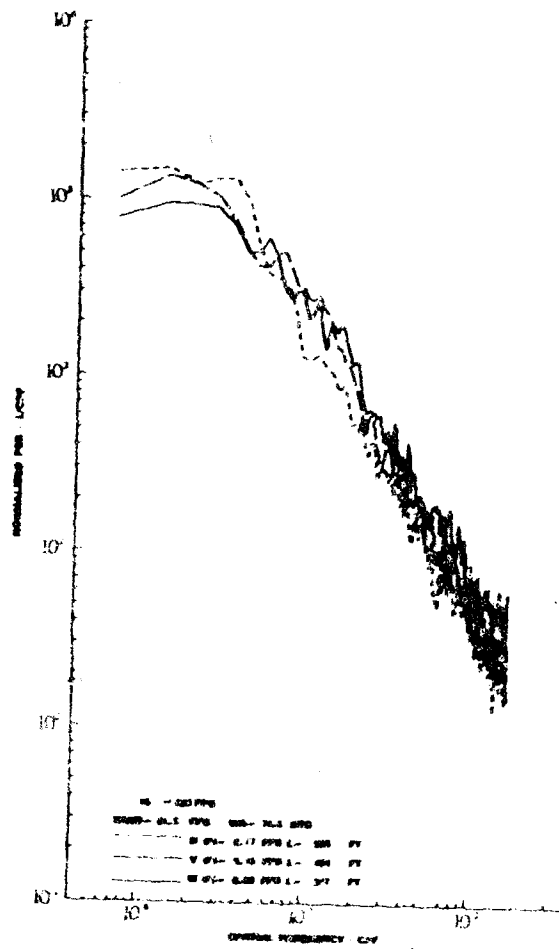


Turbulence Spectra Data For Test 170, Log 4, Category 112143

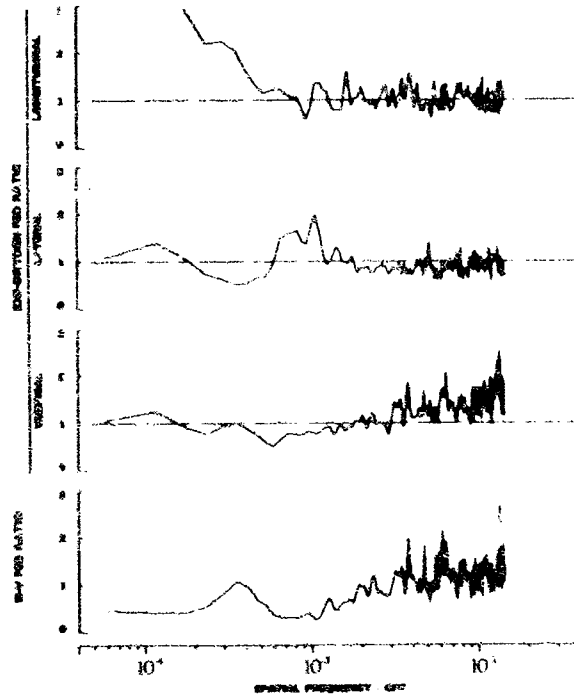
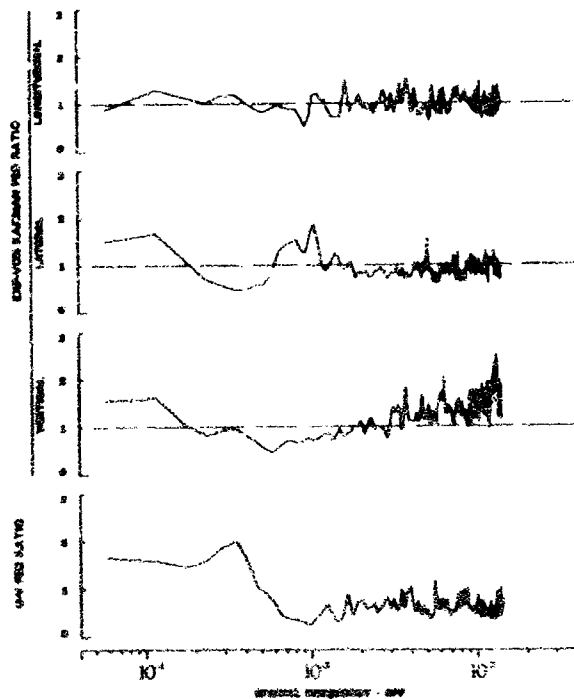
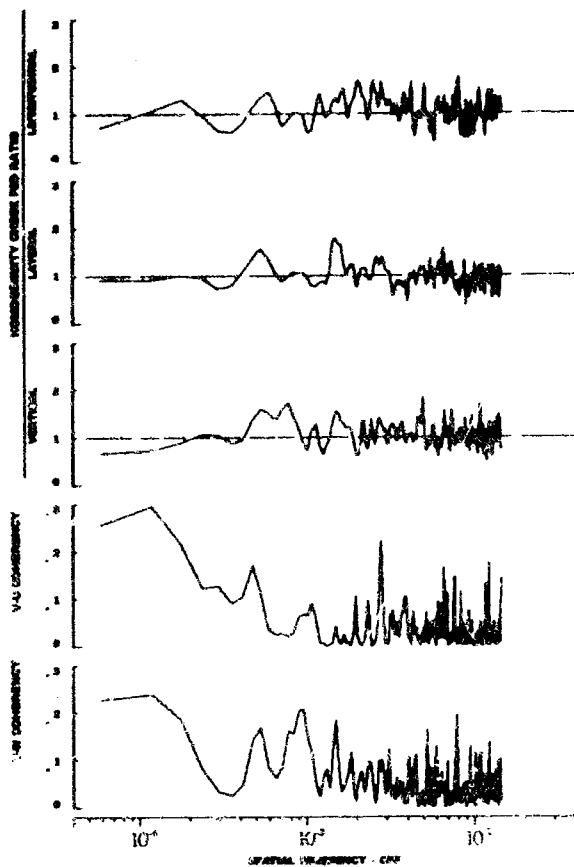
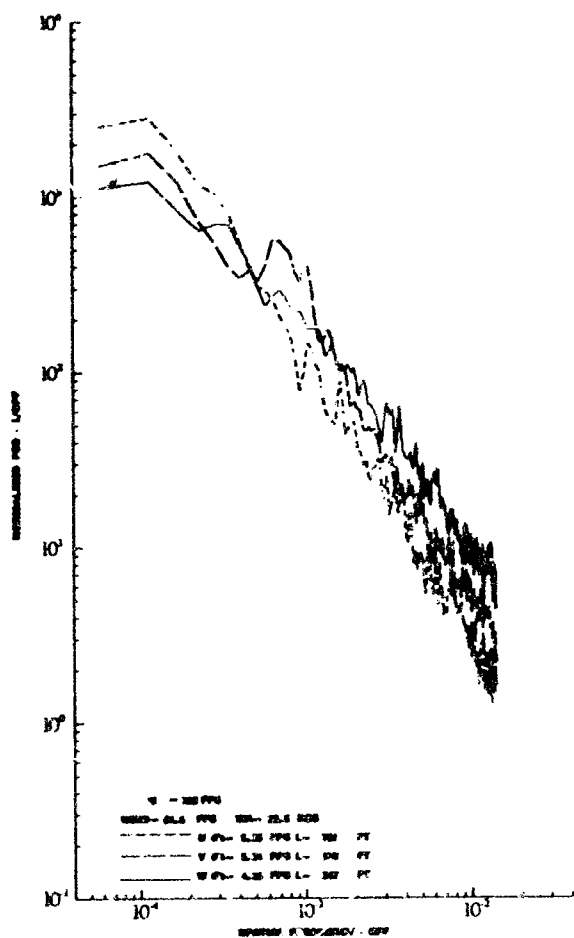


Turbulence Spectra Data For Test 171, Leg 1, Category 114243

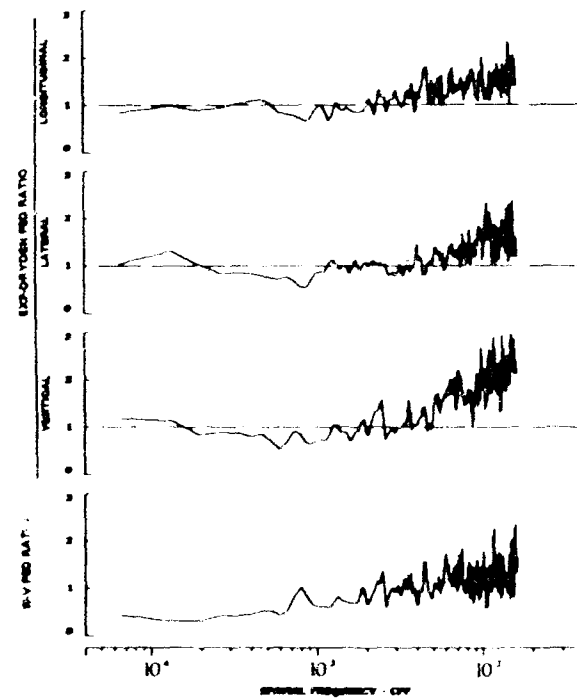
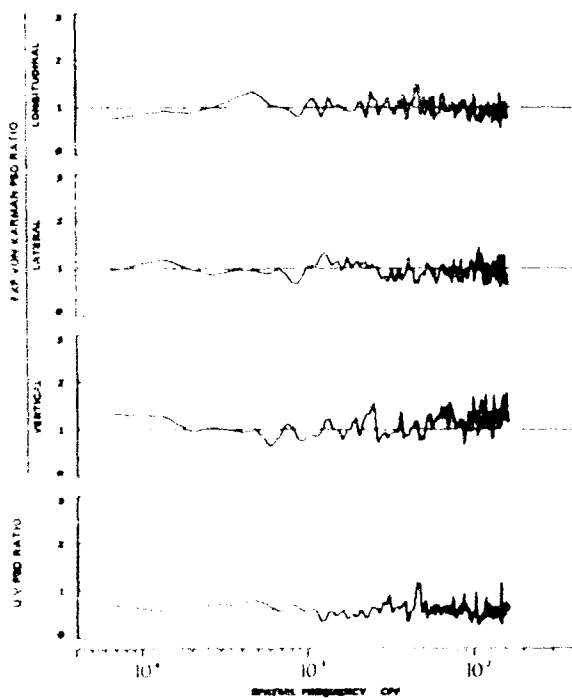
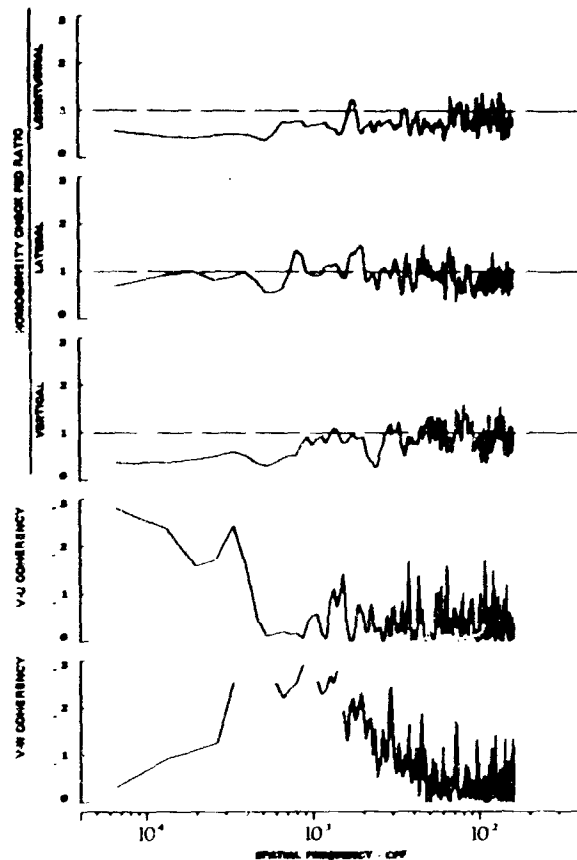
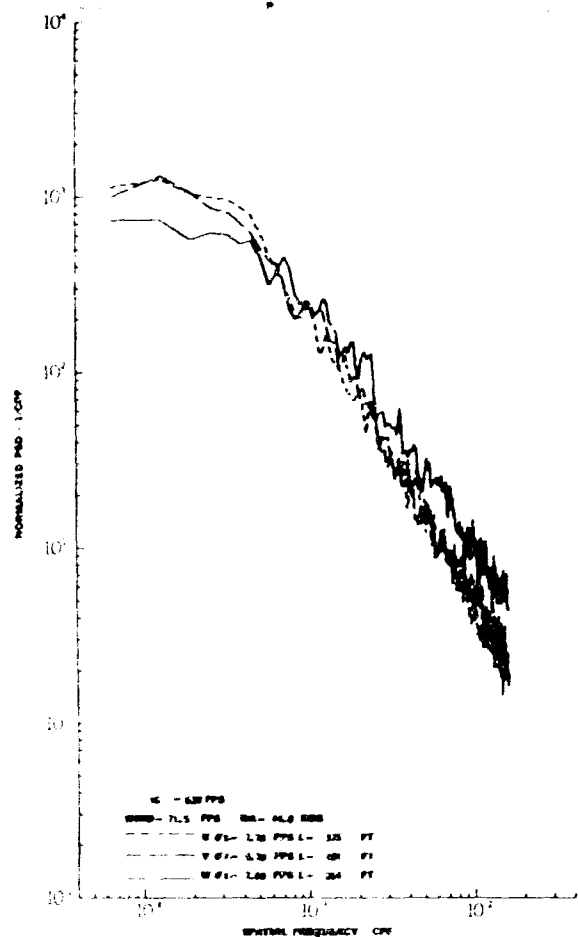




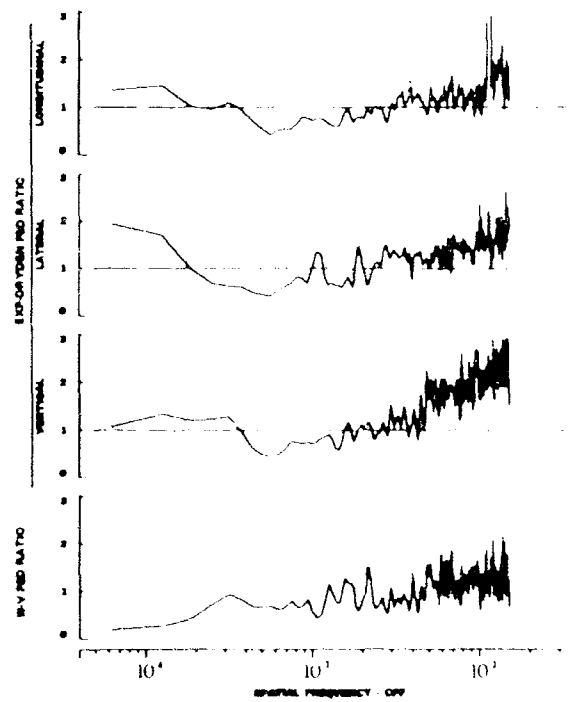
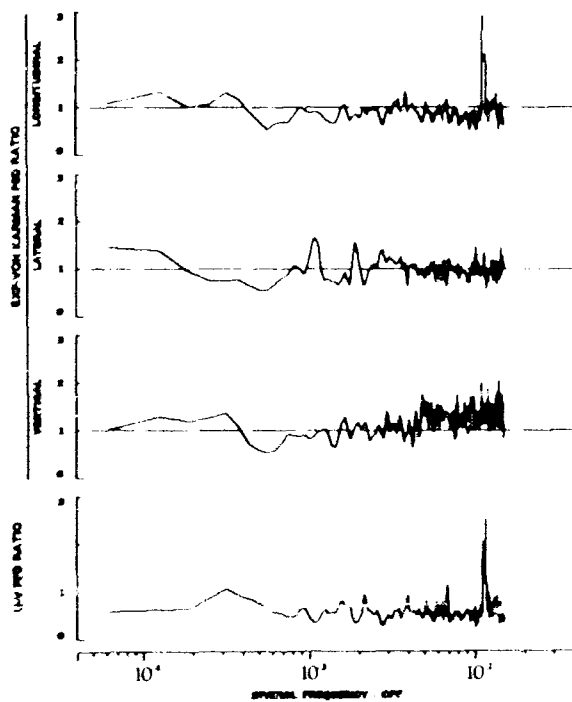
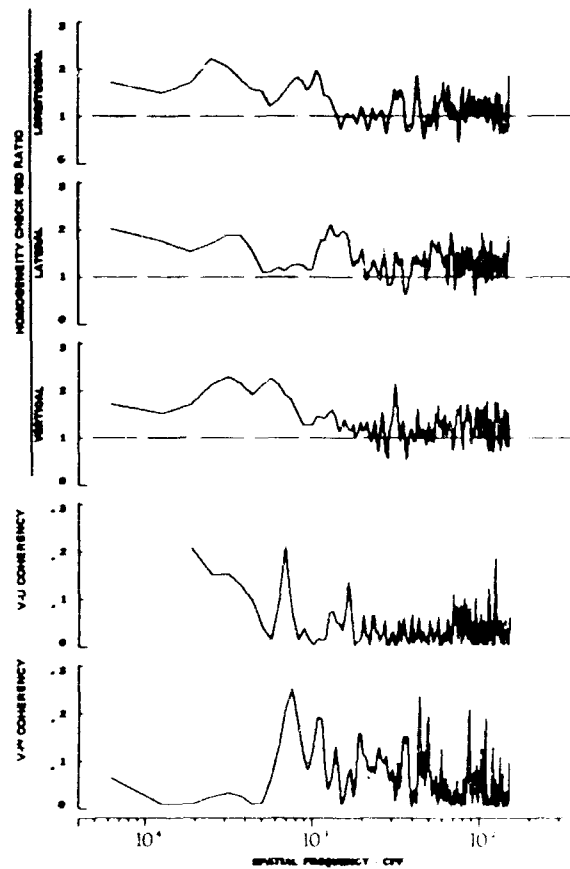
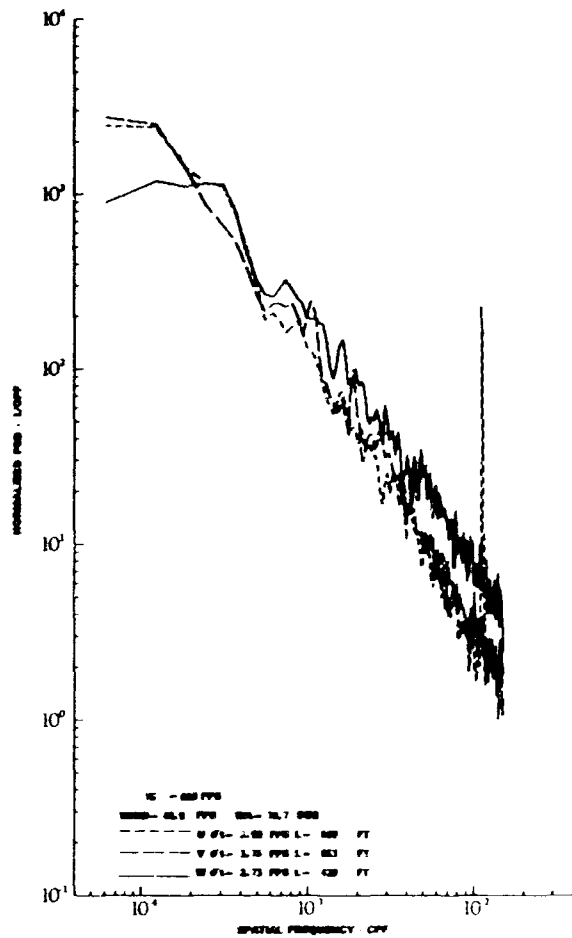
Turbulence Spectra Data For Test 171, Leg 7, Category 113243



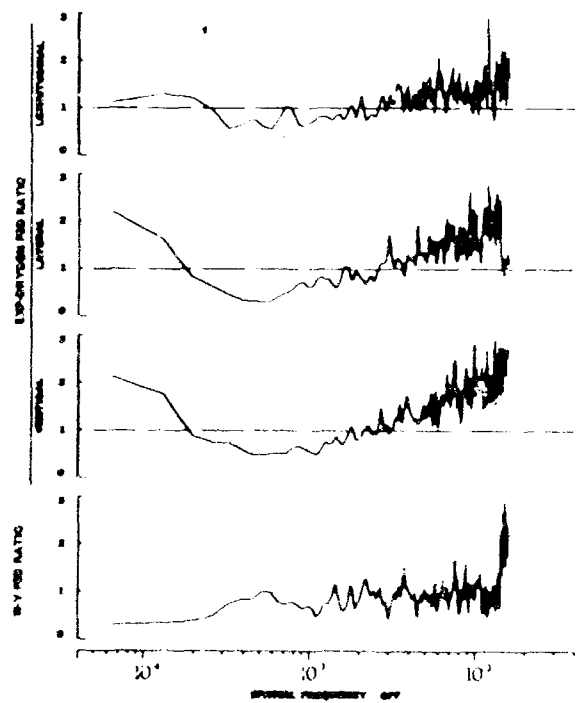
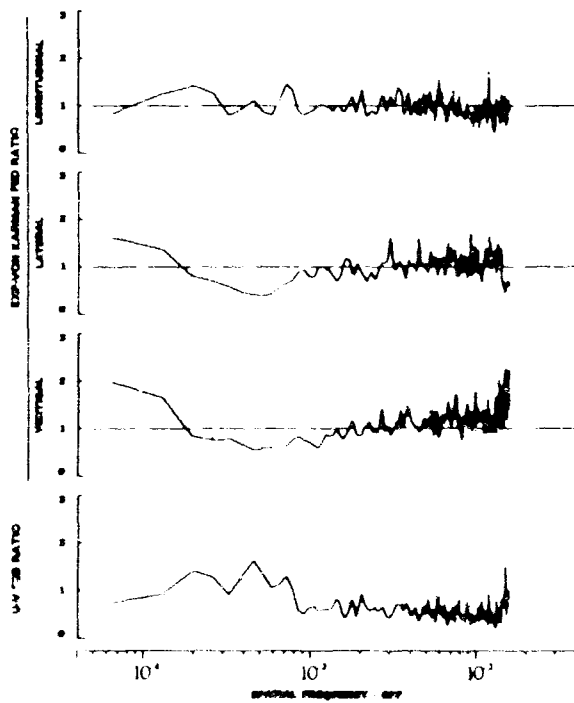
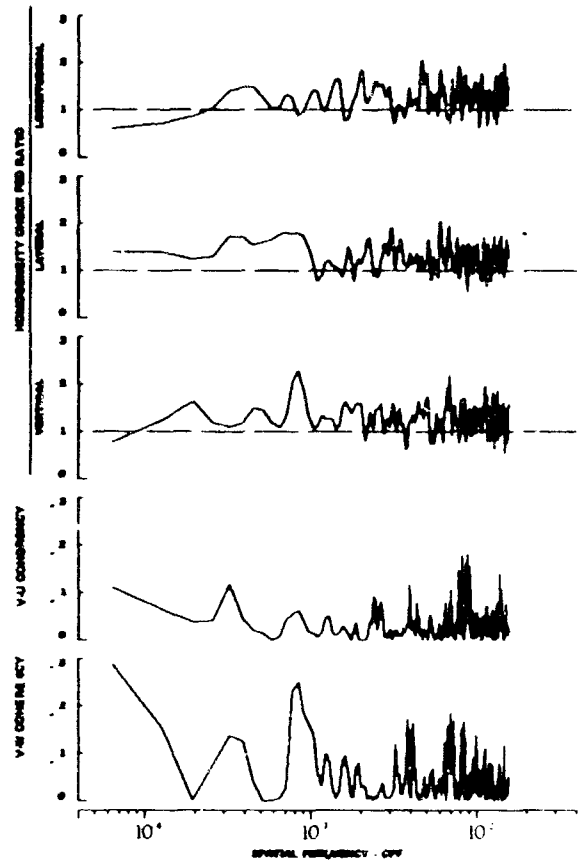
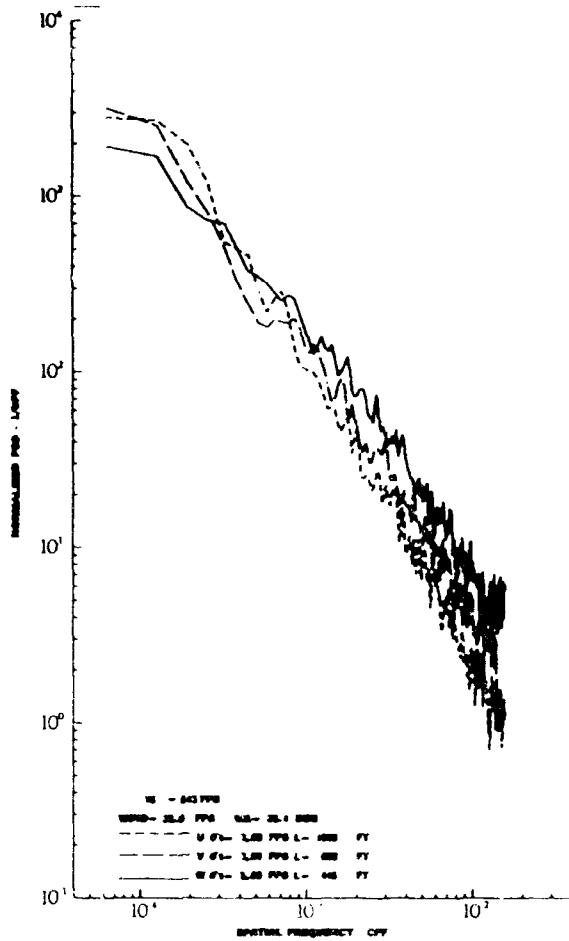
Turbulence Spectra Data For Test 171, Leg 8, Category 414243



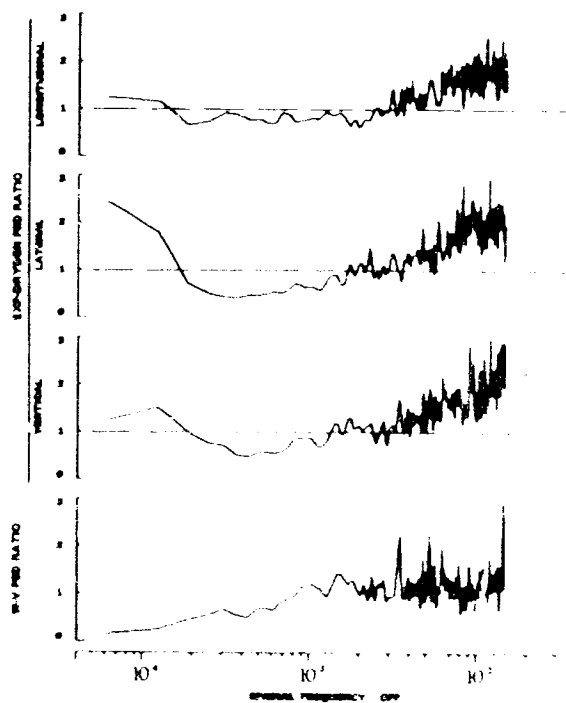
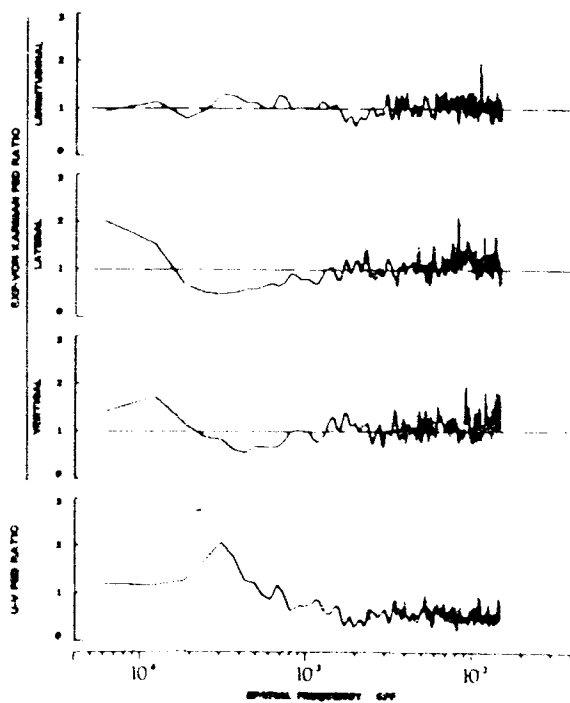
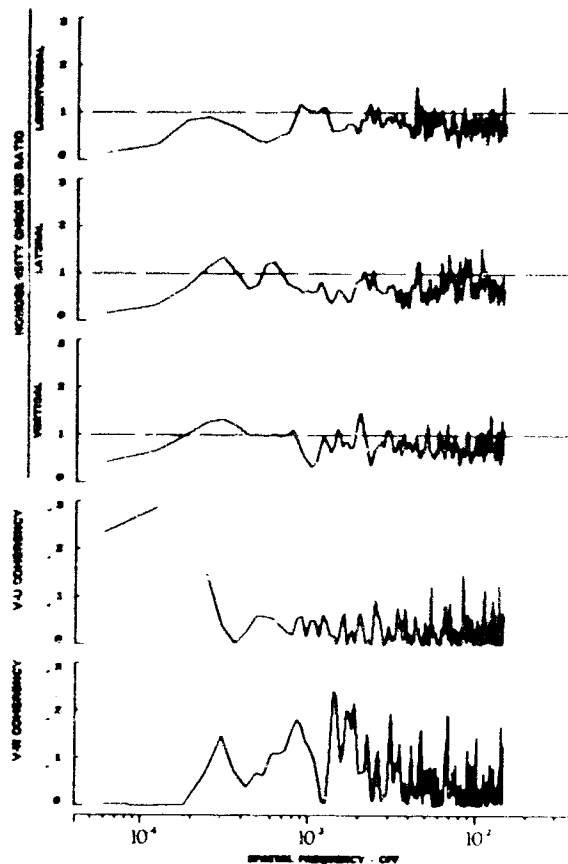
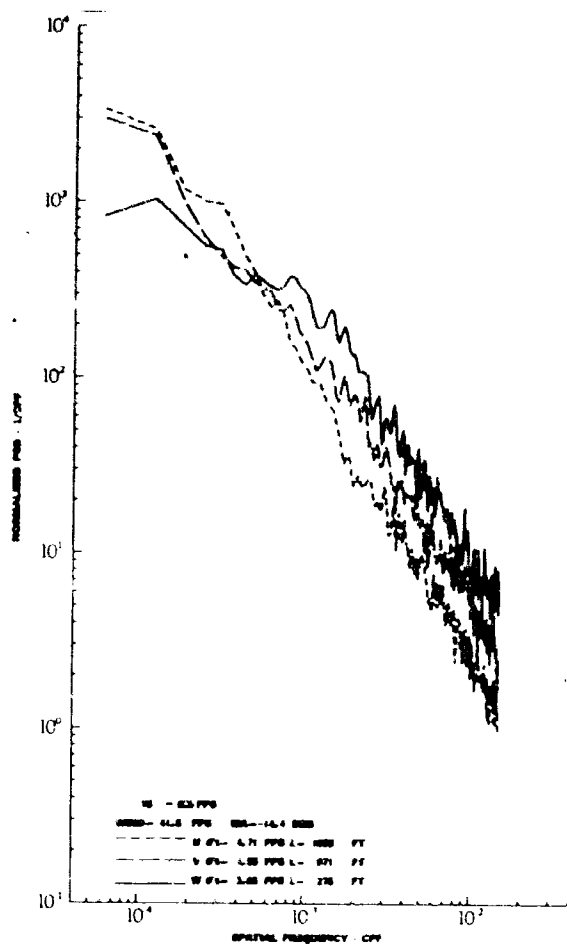
Turbulence Spectra Data For Test 172, Leg 6, Category 112343



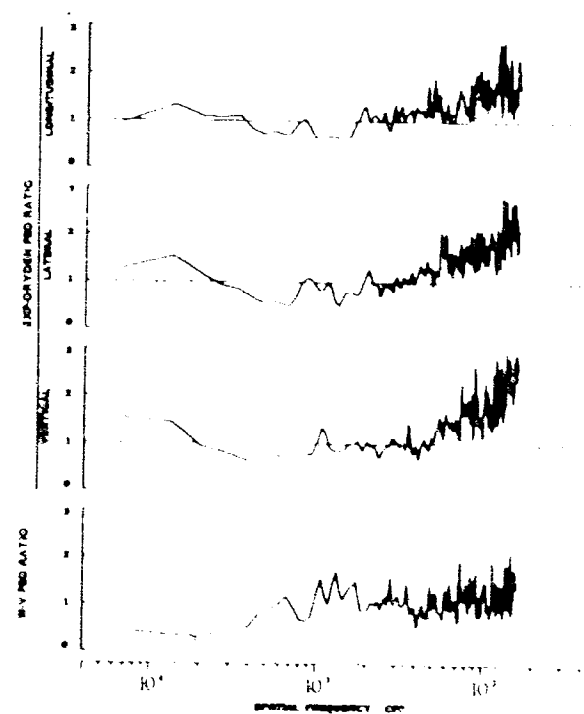
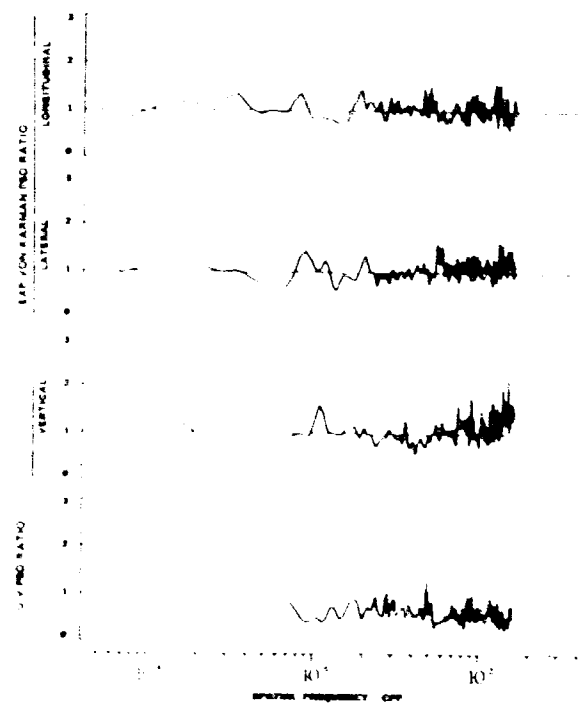
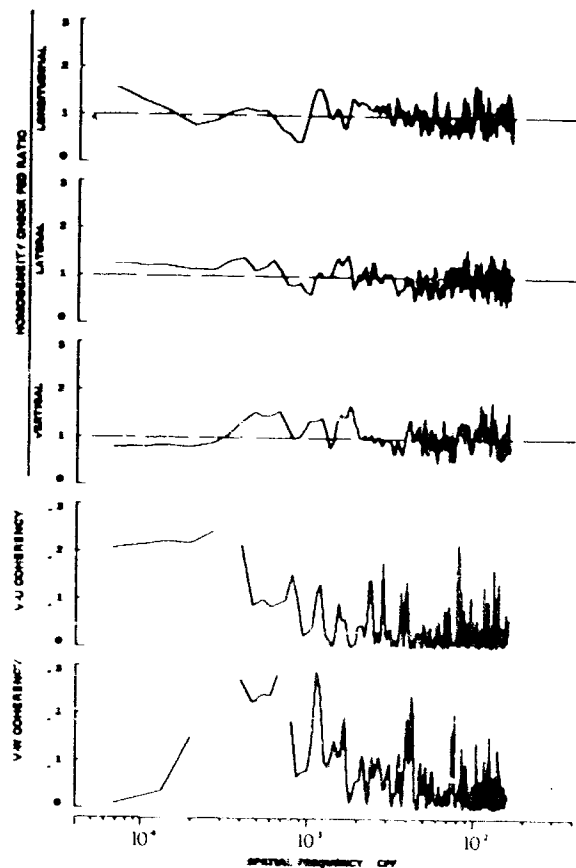
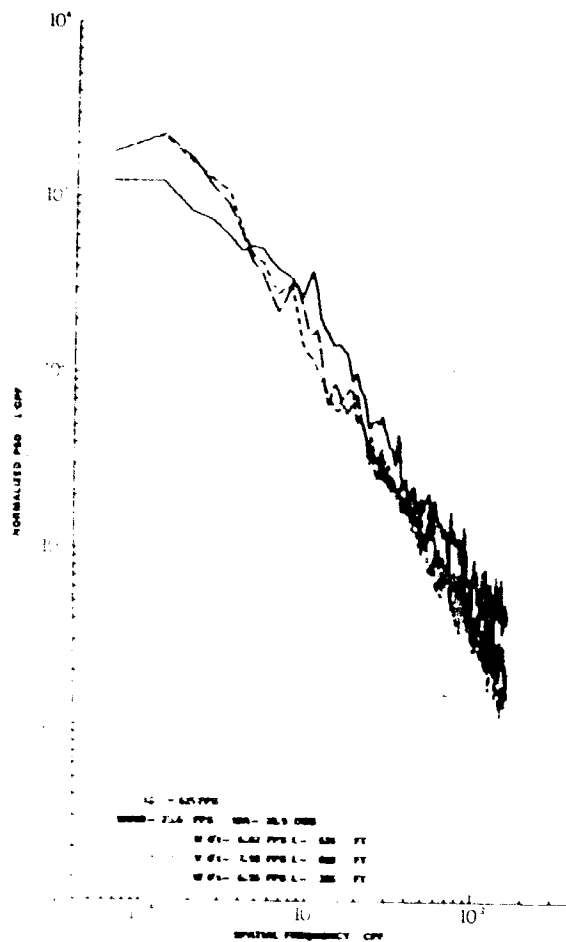
Turbulence Spectra Data For Test 174, Leg 8, Category 422243



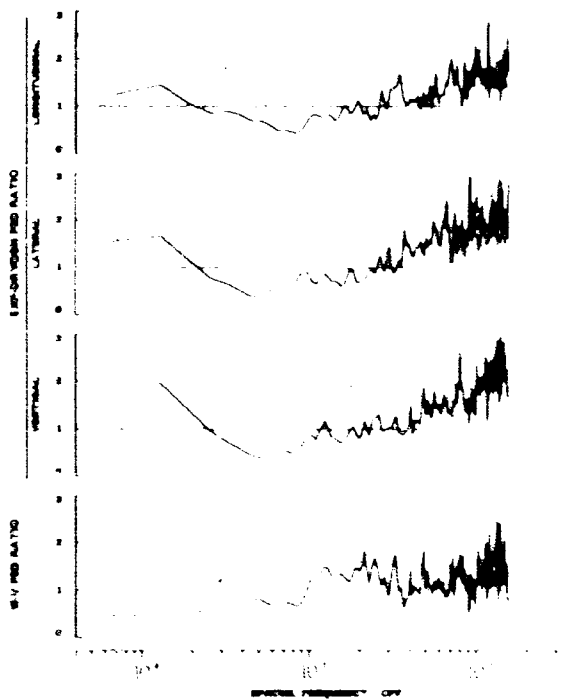
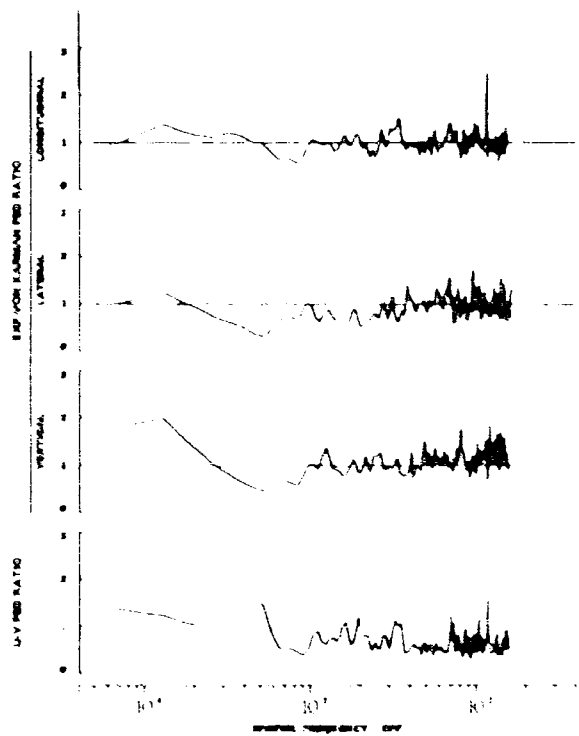
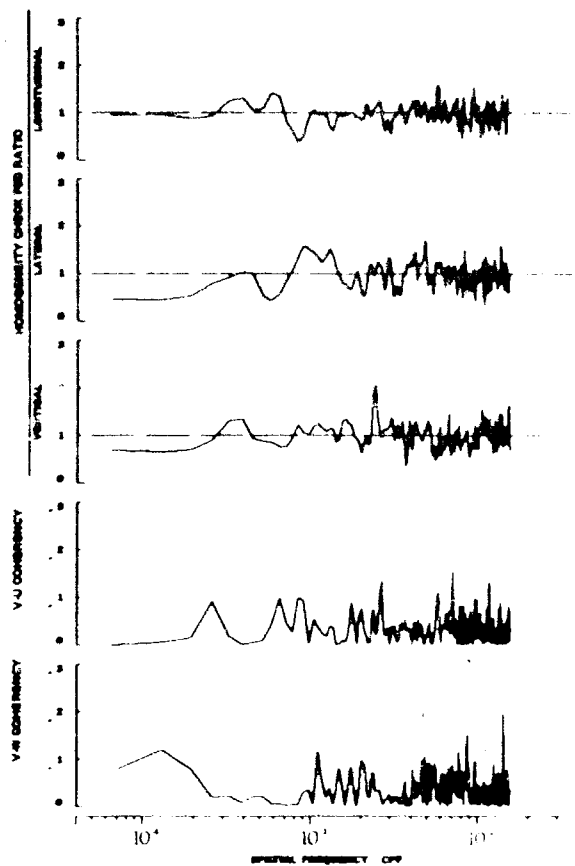
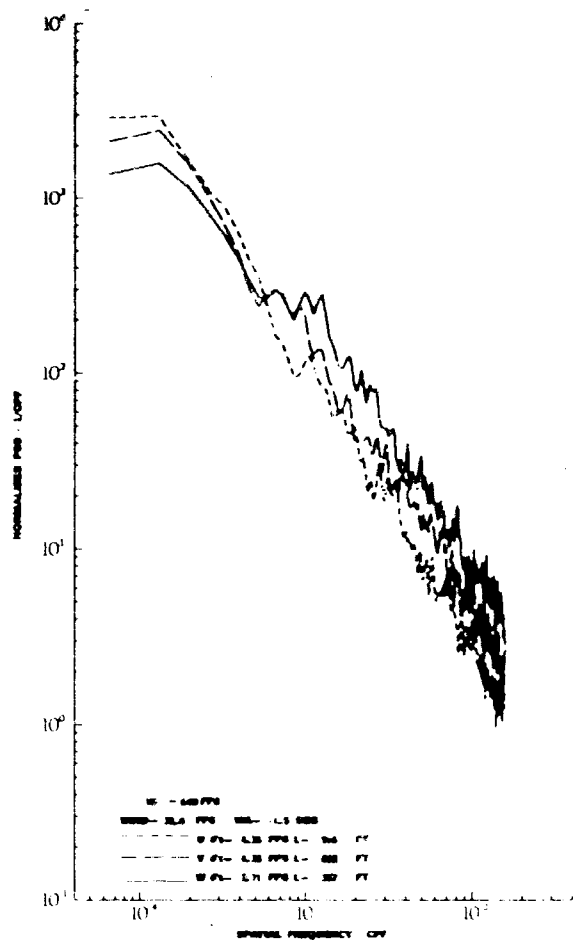
Turbulence Spectra Data For Test 177, Leg 1, Category 112343



Turbulence Spectra Data For Test 177, Leg 3, Category 113343

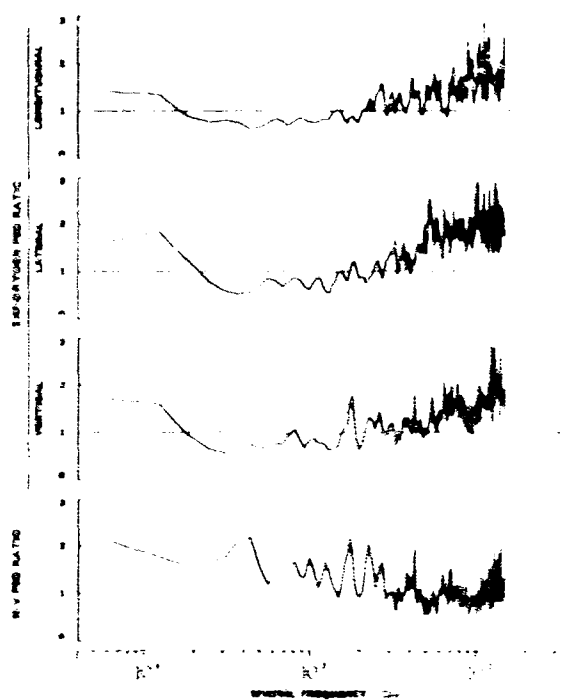
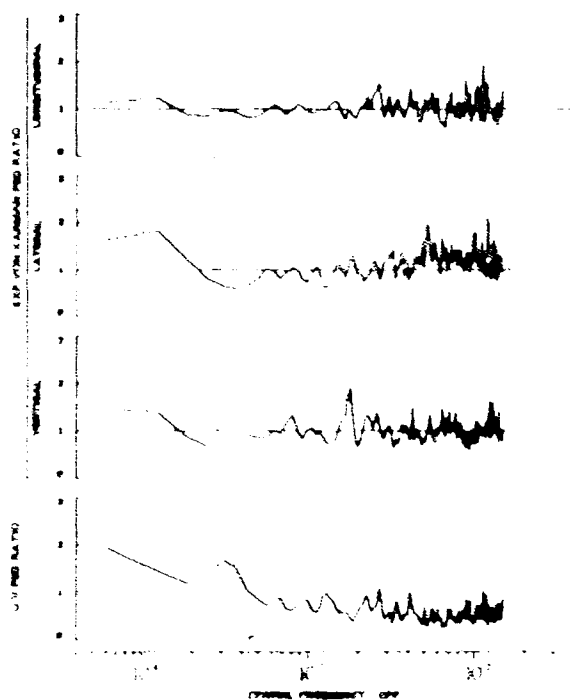
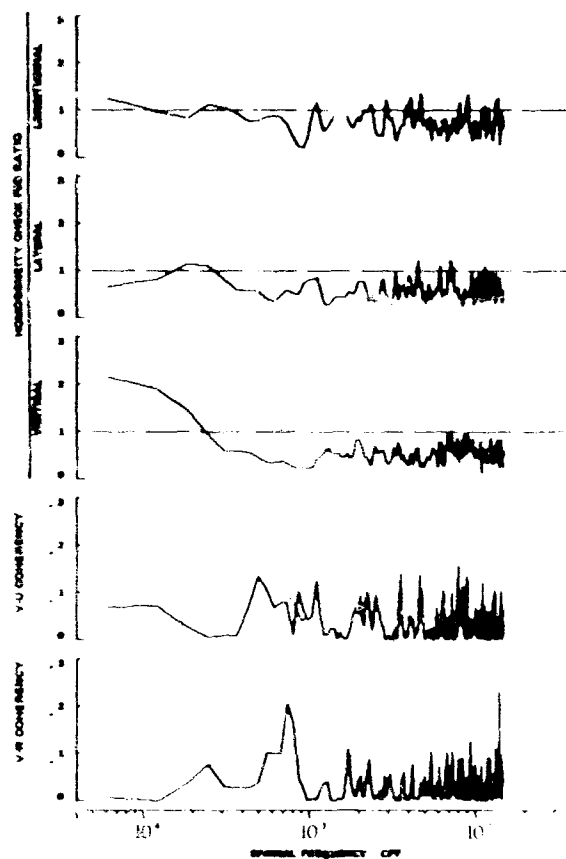


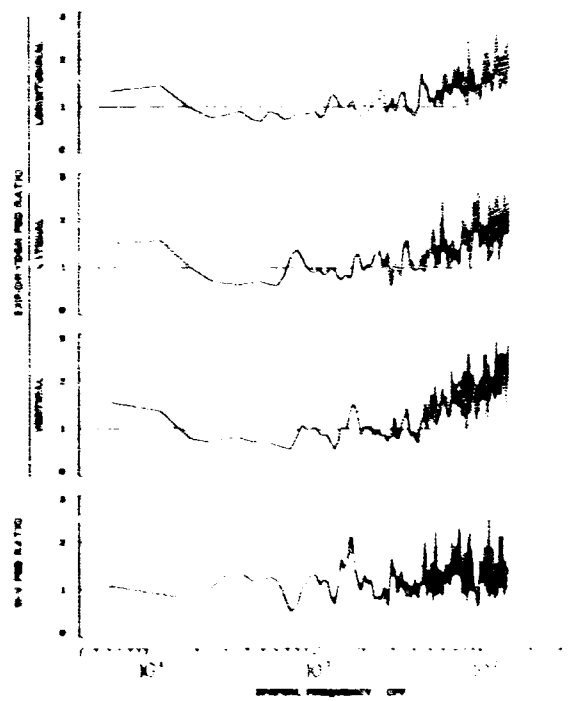
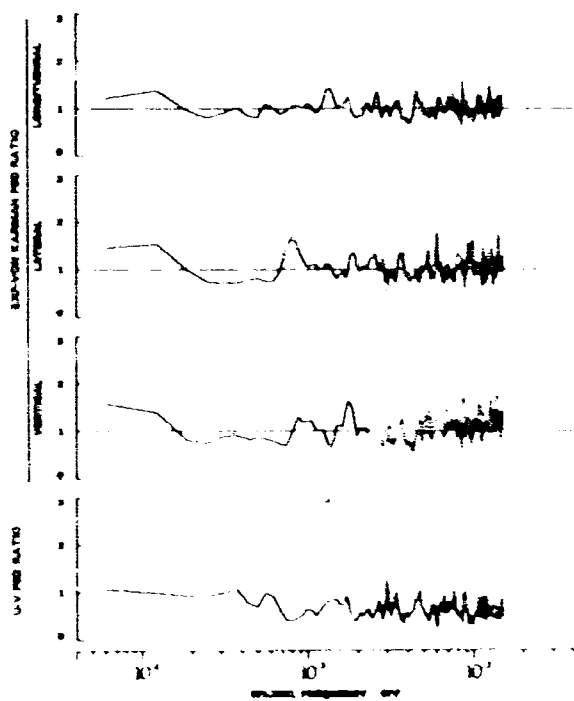
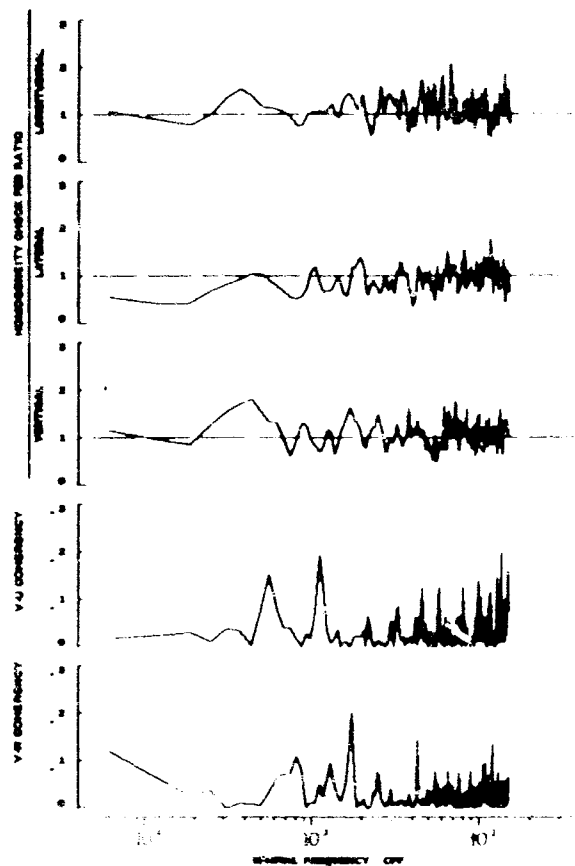
Turbulence Spectra Data for Test 177, Leg 5, Category 112343



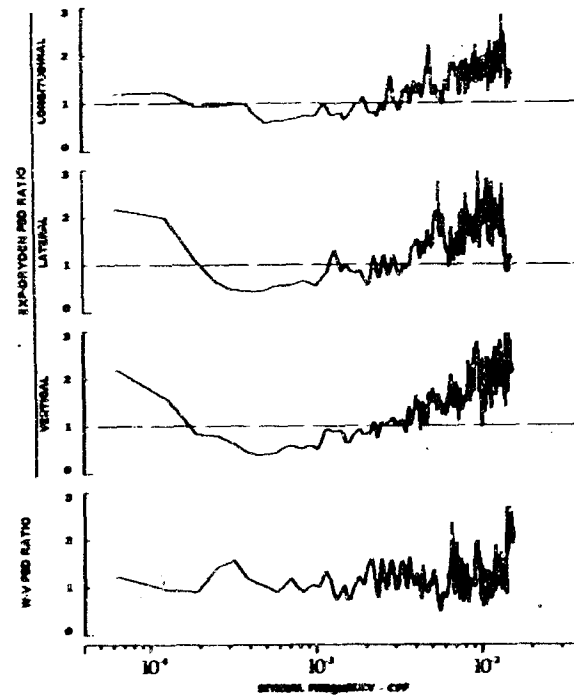
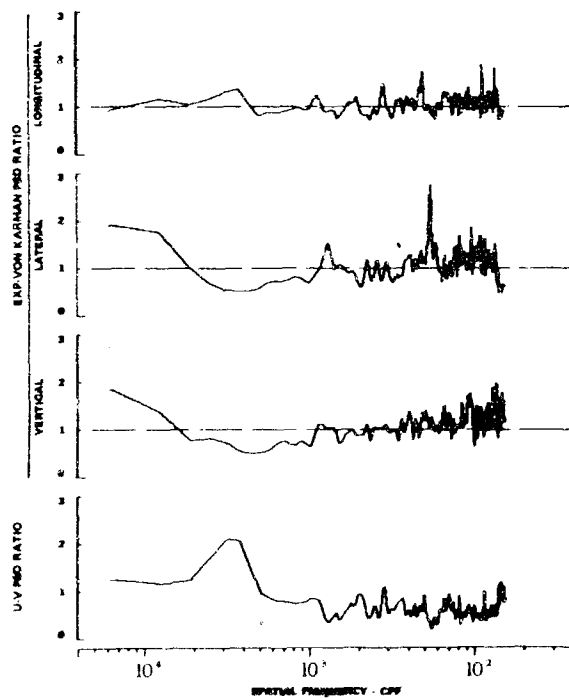
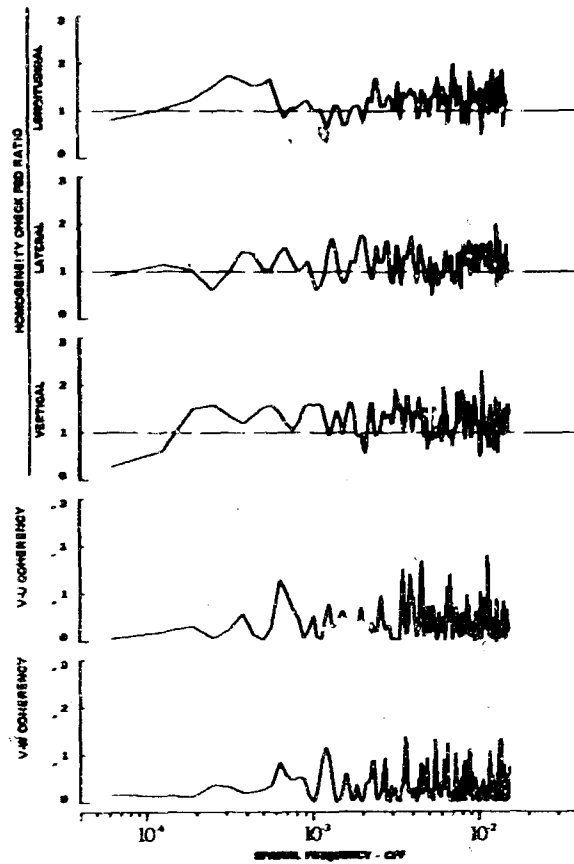
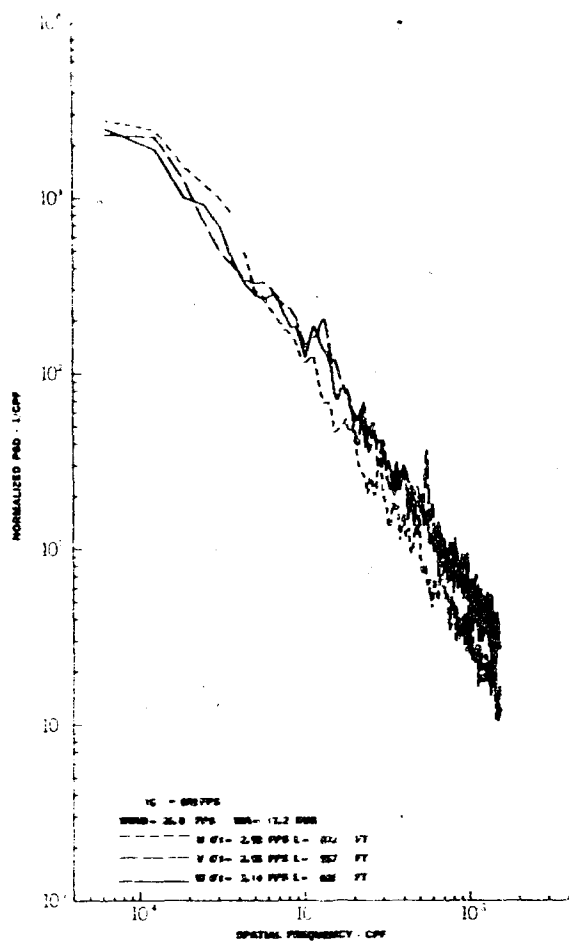
Turbulence Spectra Data For Test 177, Leg 7, Category 113343



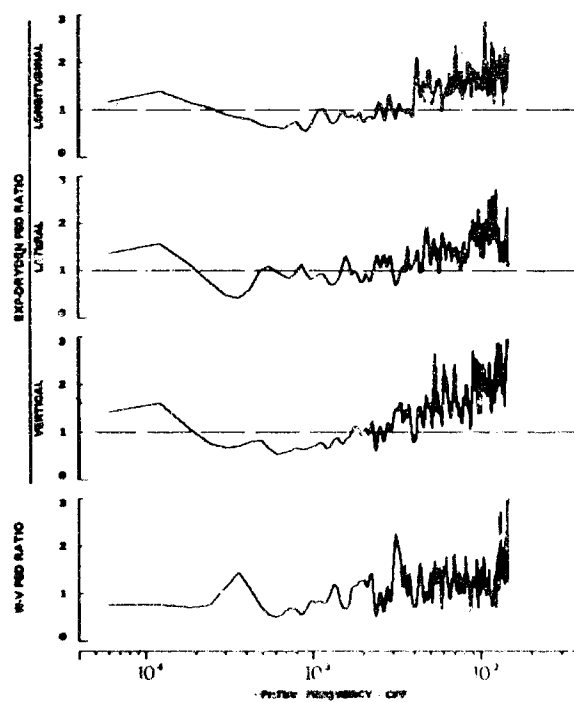
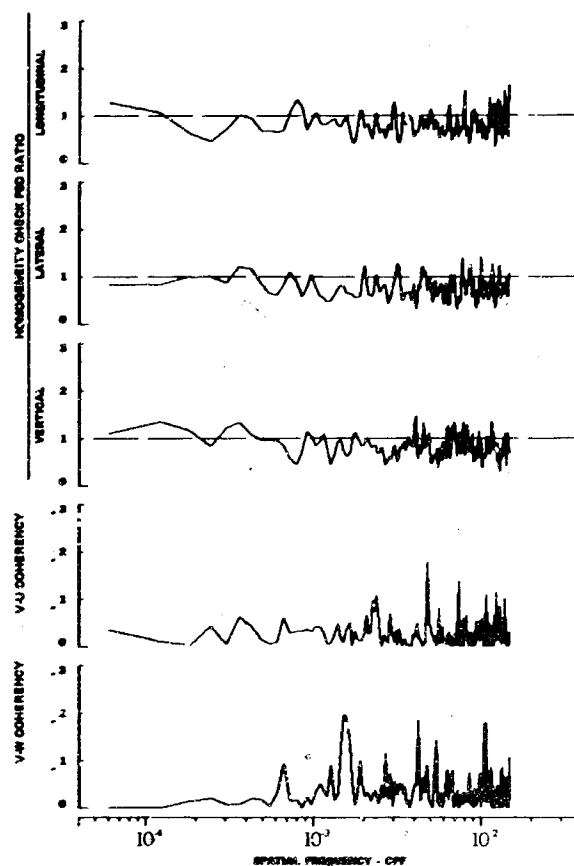


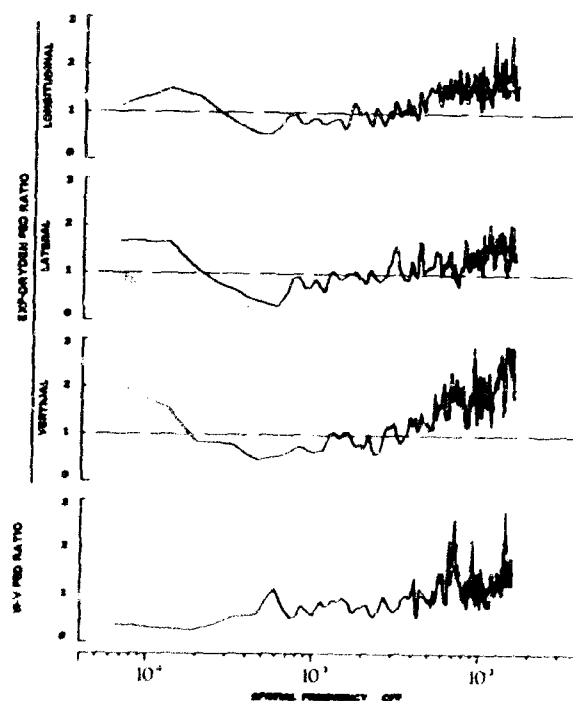
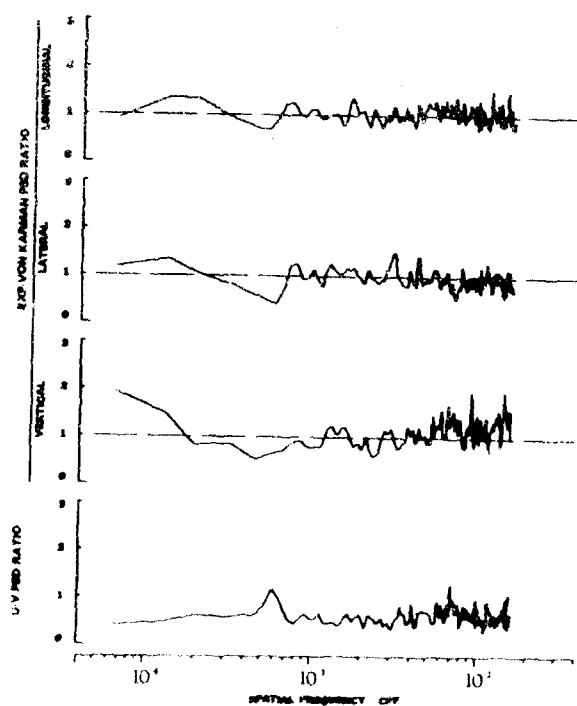
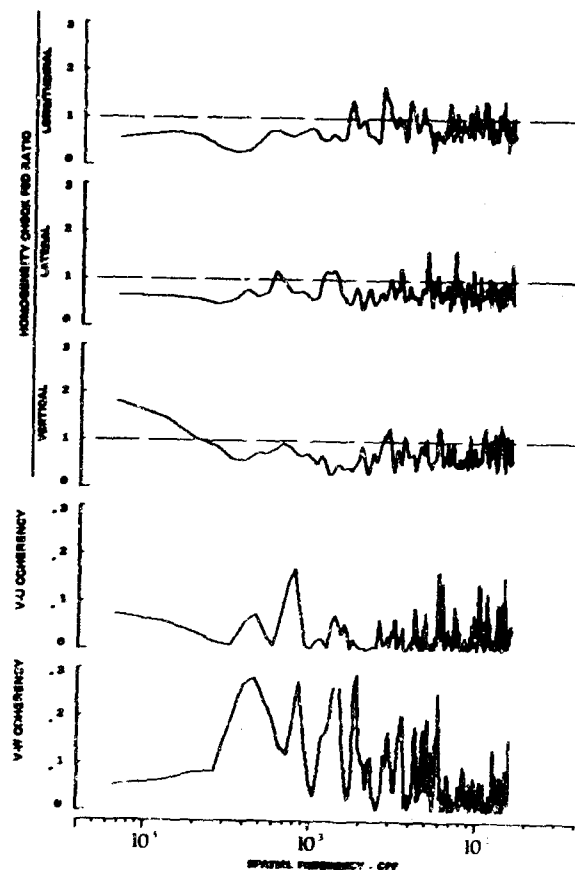


Turbulence Spectra Data For Test 174, Leg 6, Category 122243

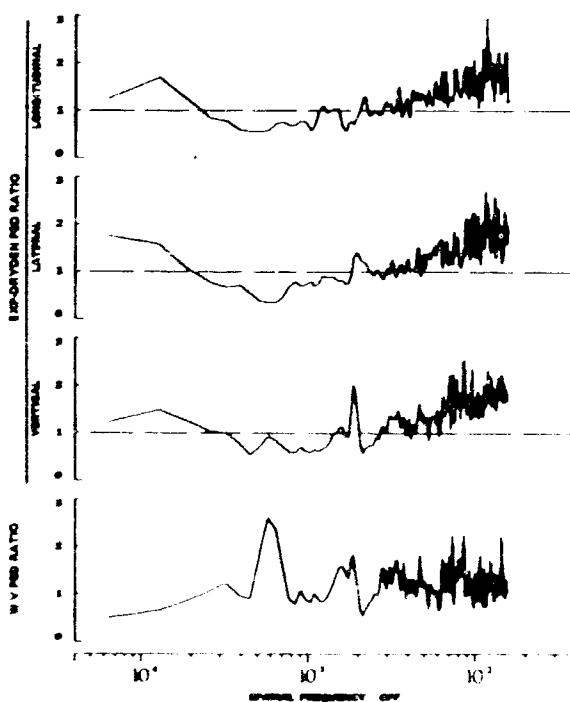
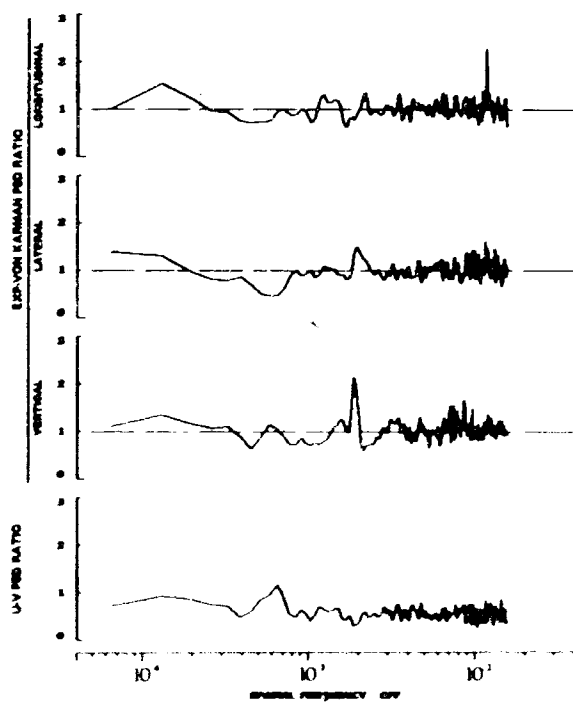
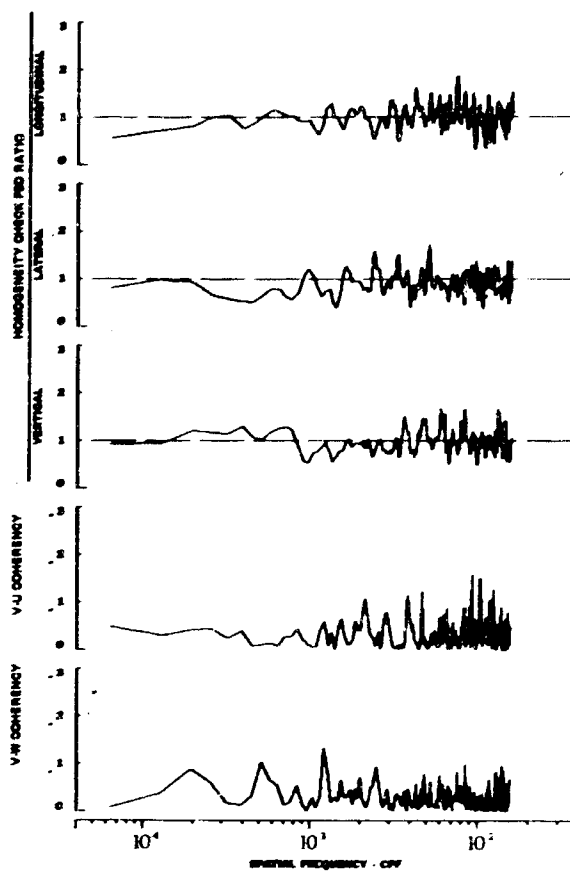
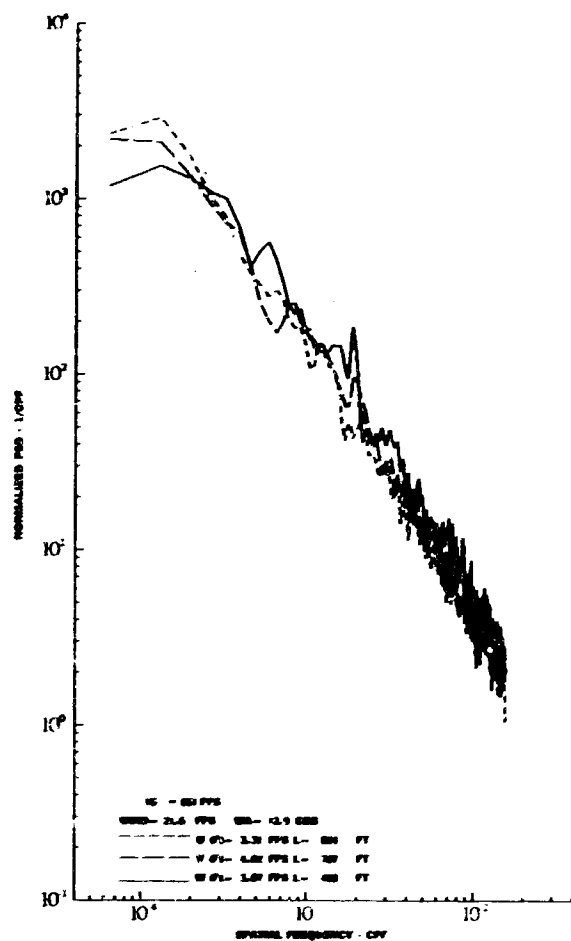


Turbulence Spectra Data For Test 179, Leg 1, Category 122343

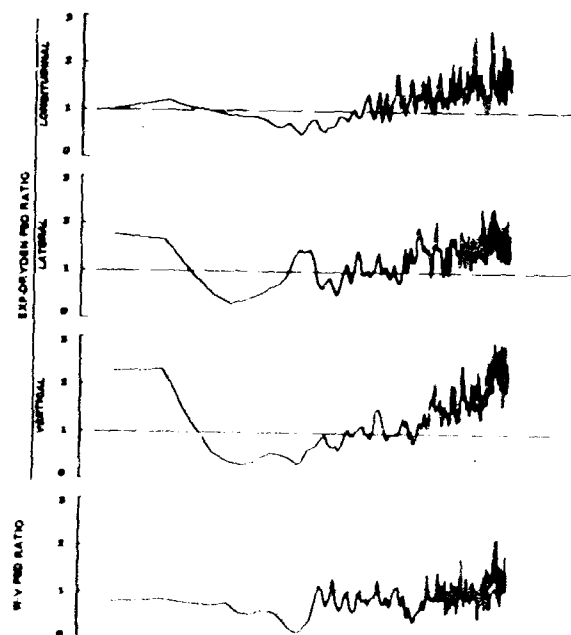
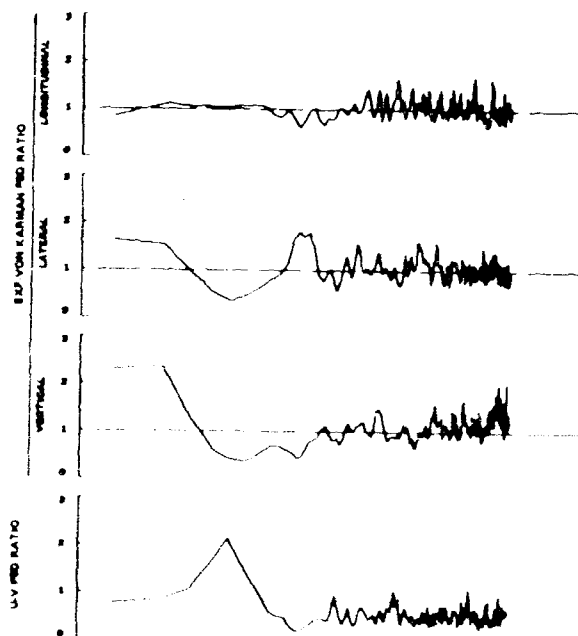
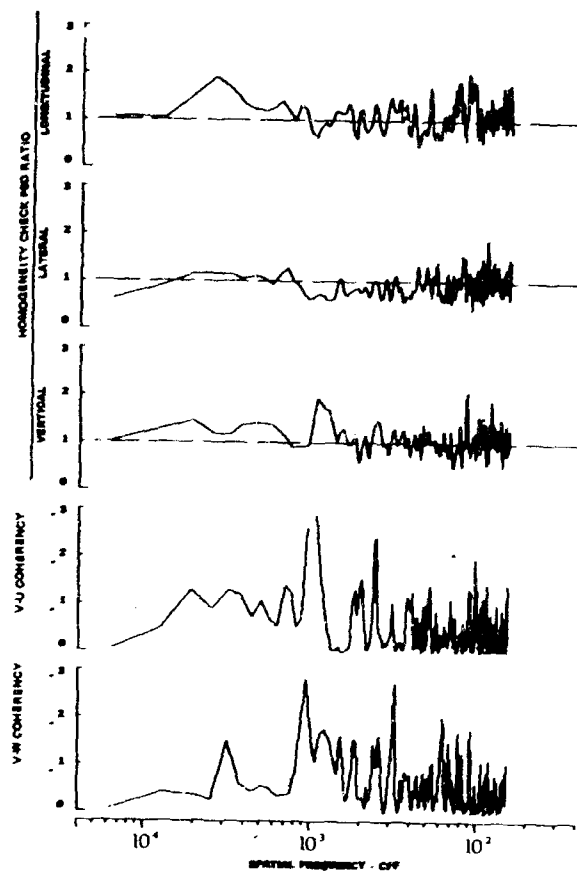
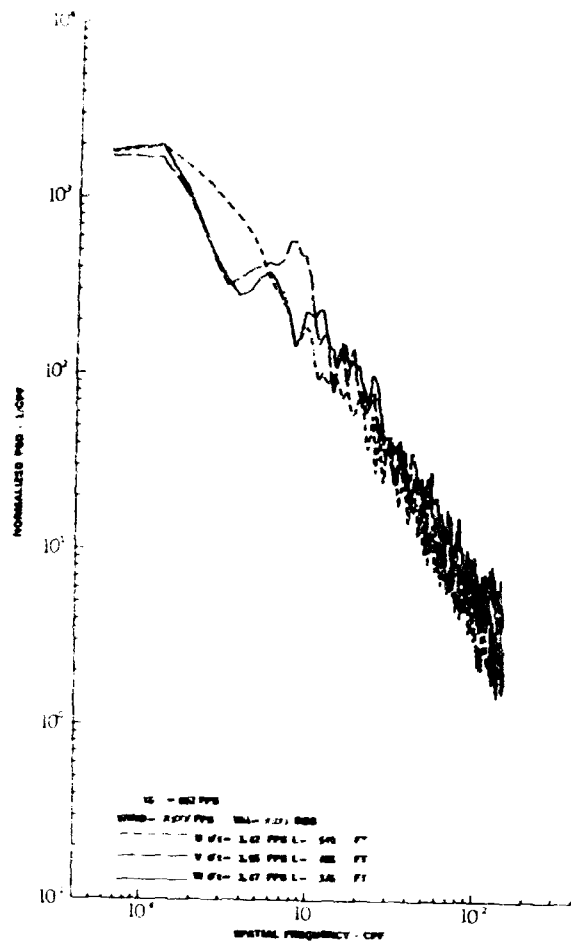




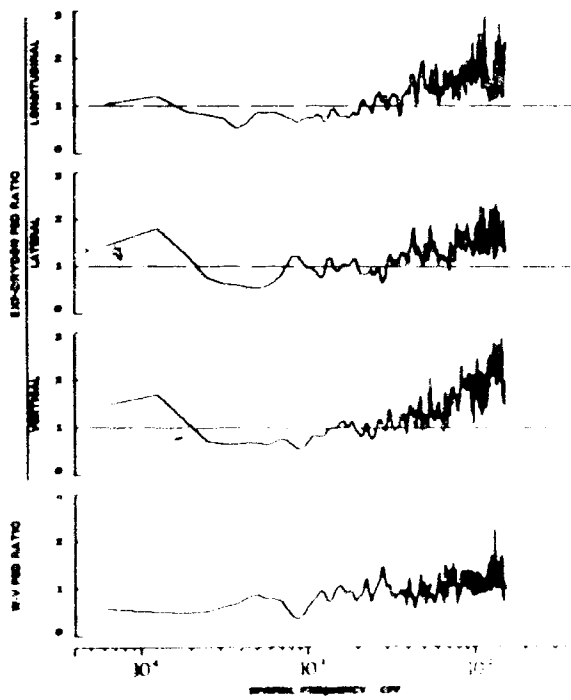
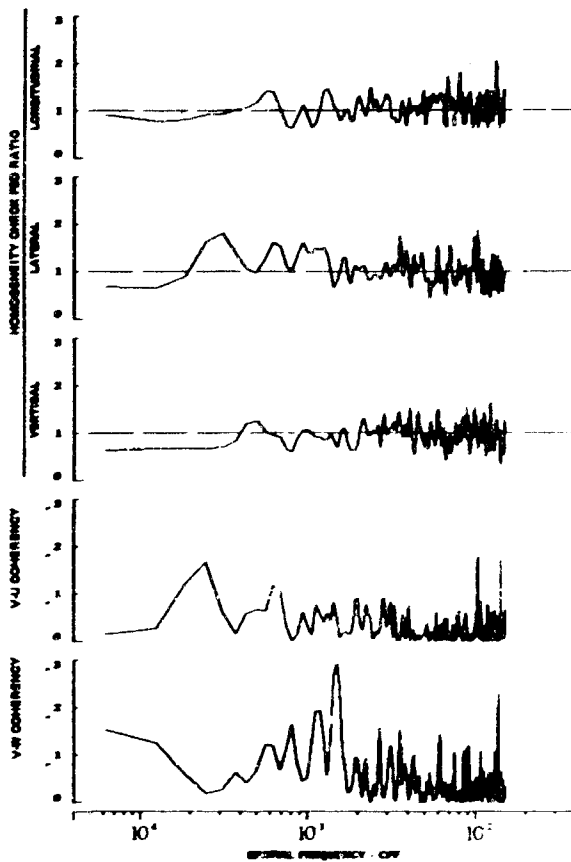
Turbulence Spectra Data For Test 179, Leg 5, Category 122343



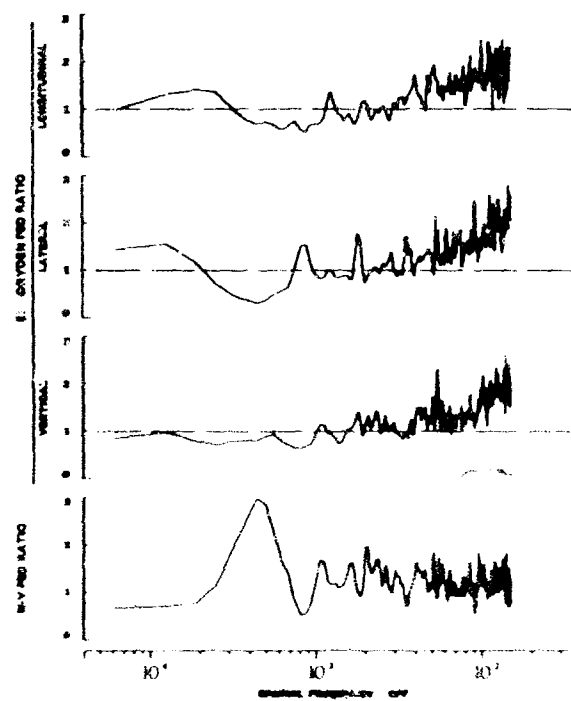
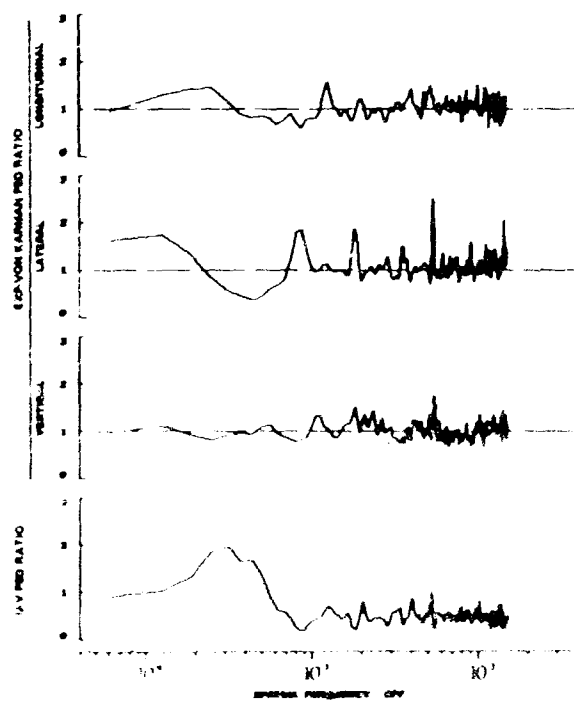
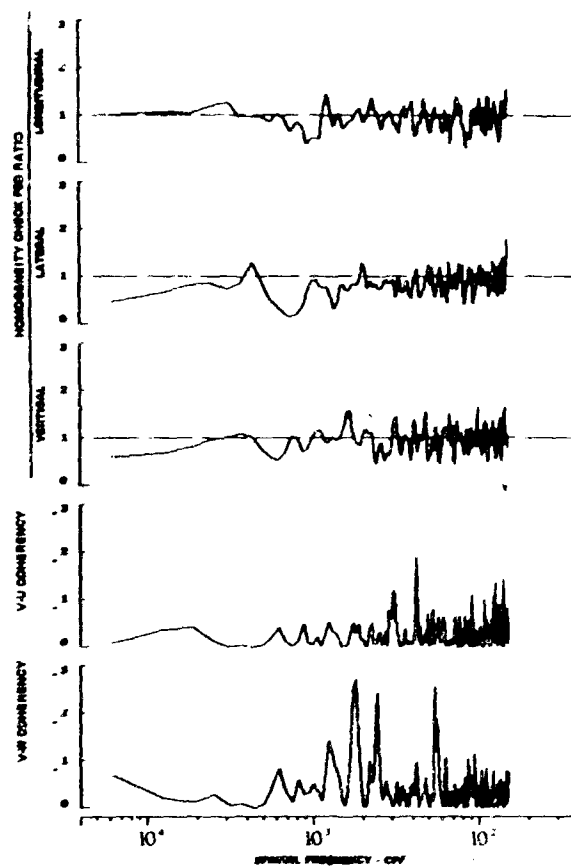
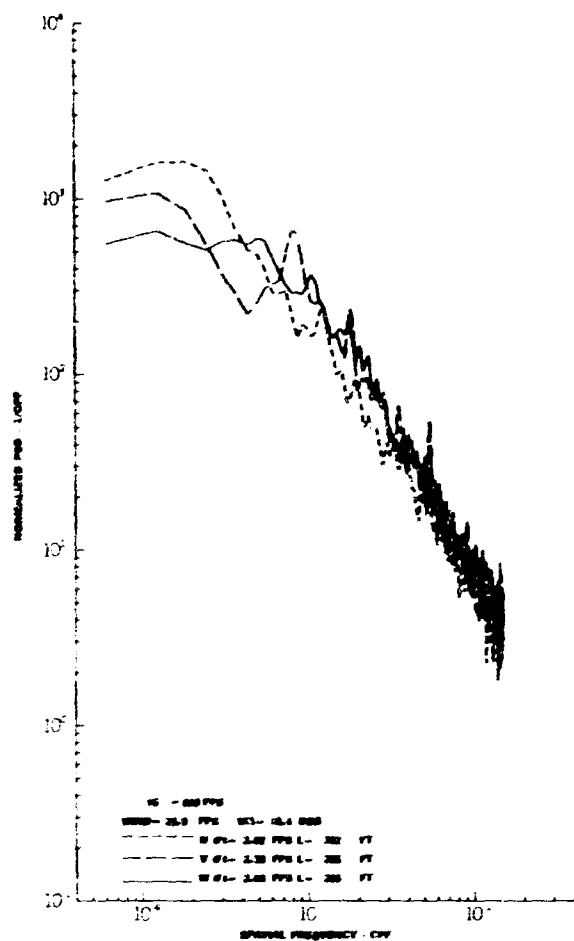
Turbulence Spectra Data For Test 179, Log 7, Category 123343



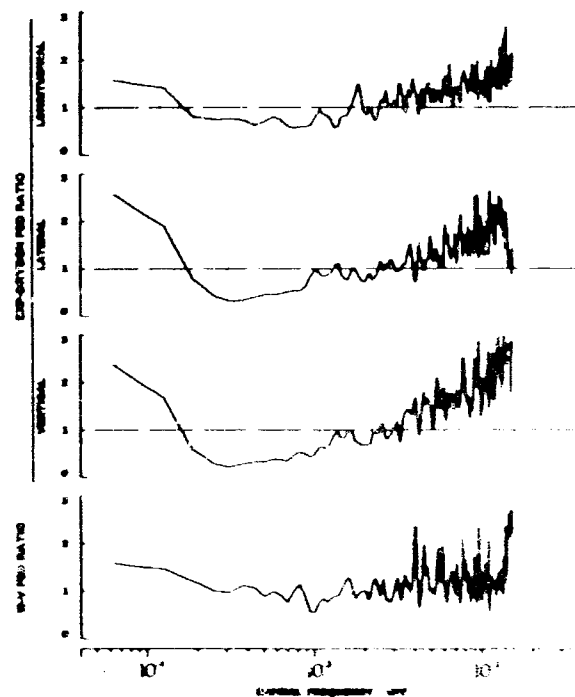
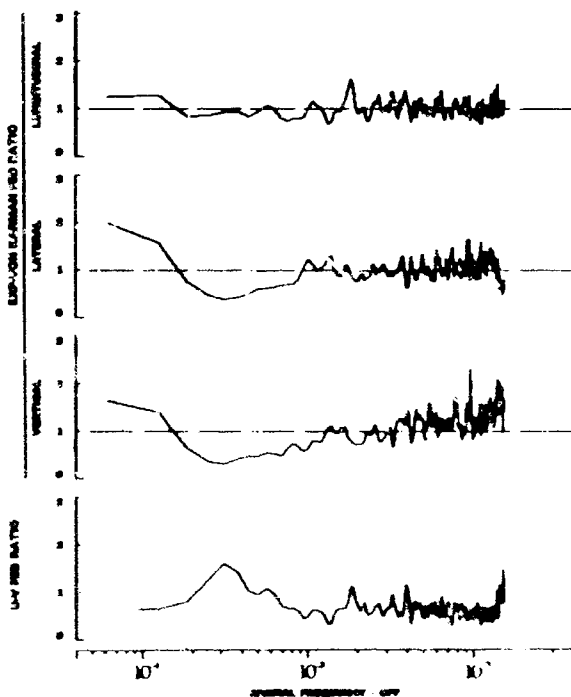
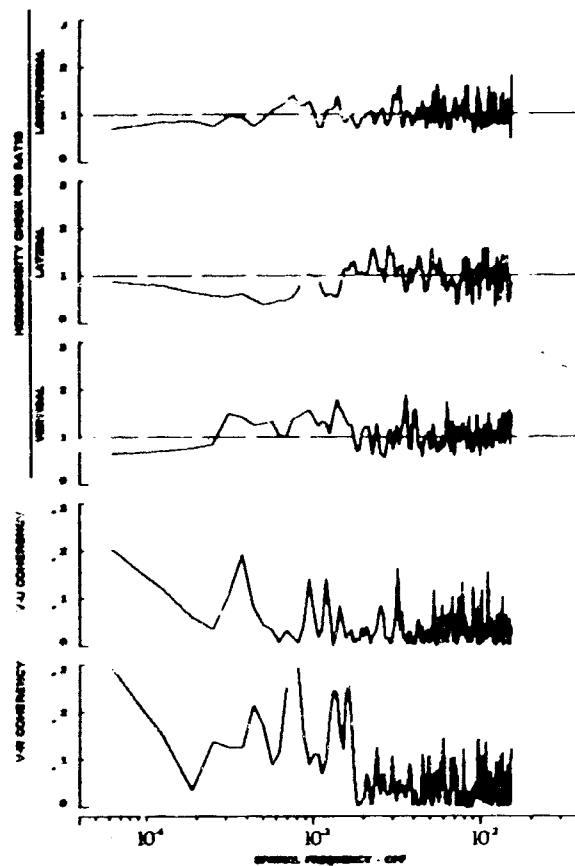
Turbulence Spectra Data For Test 180, Leg 4, Category 111243





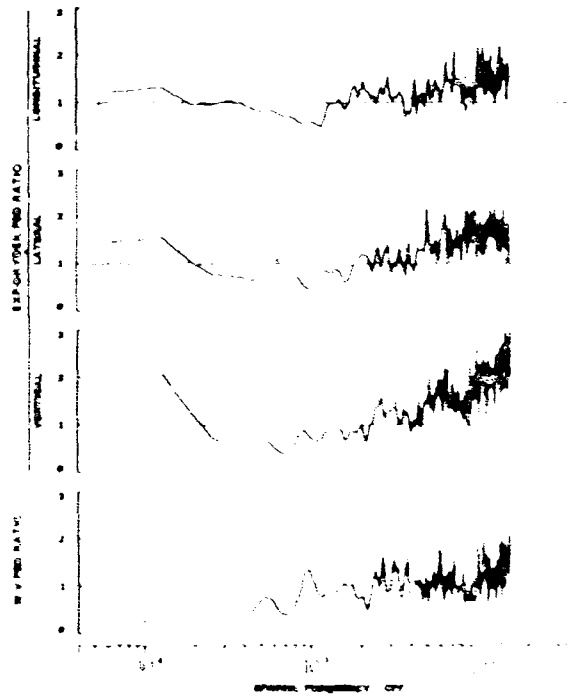
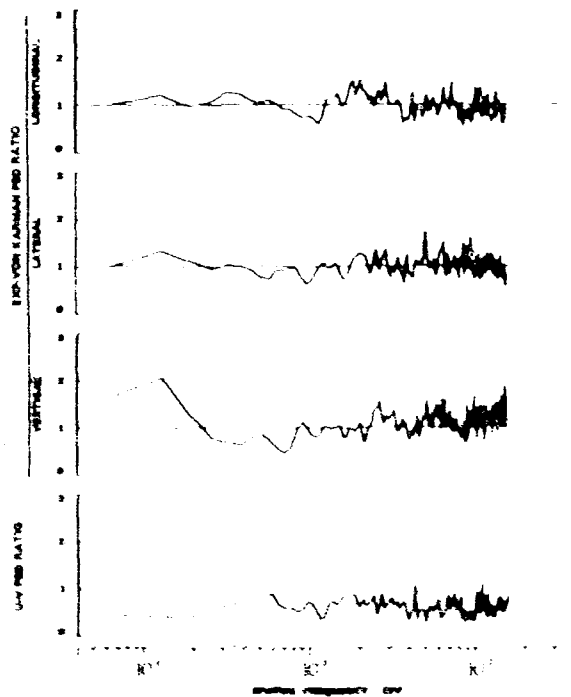
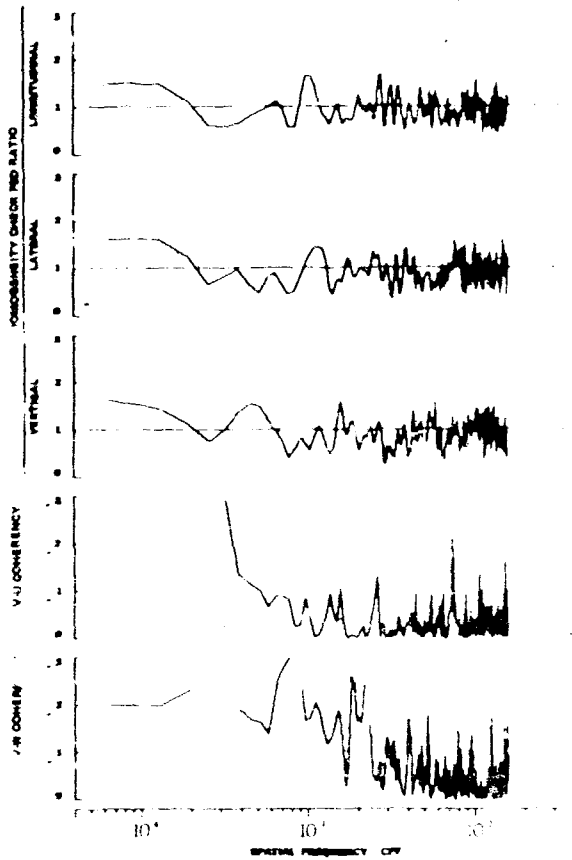
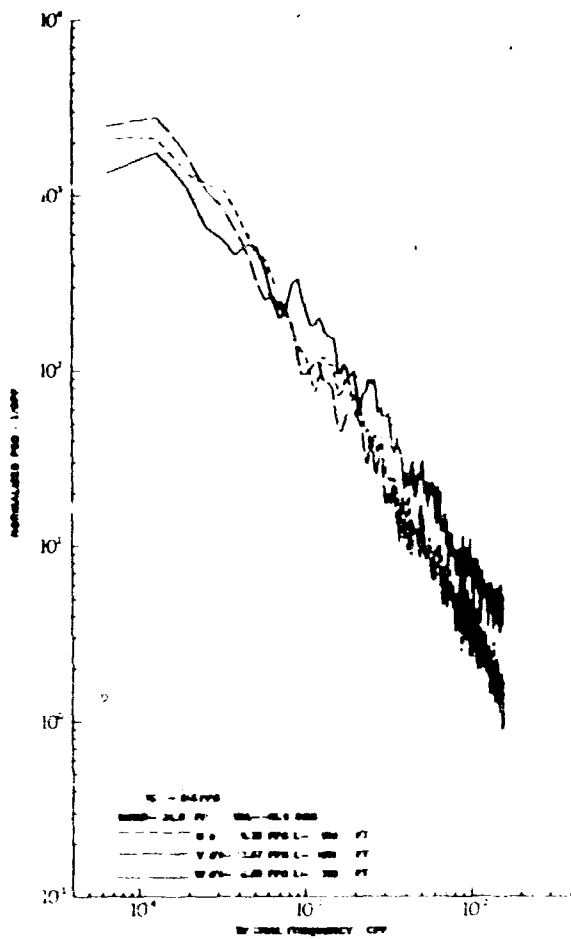


Turbulence Spectra Data For Test 100, Leg 8, Category 411243

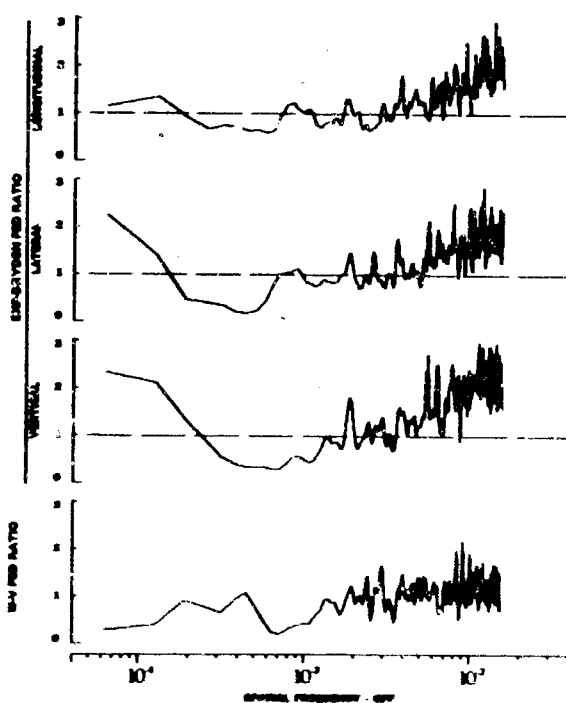
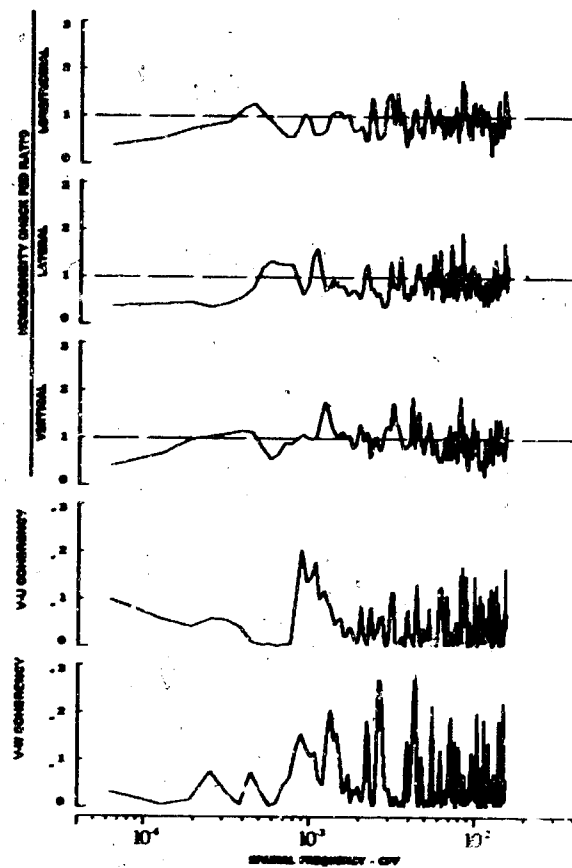


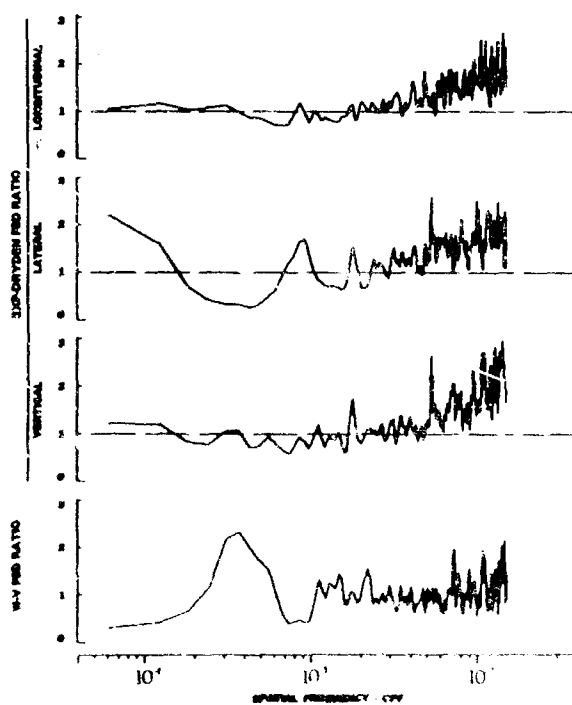
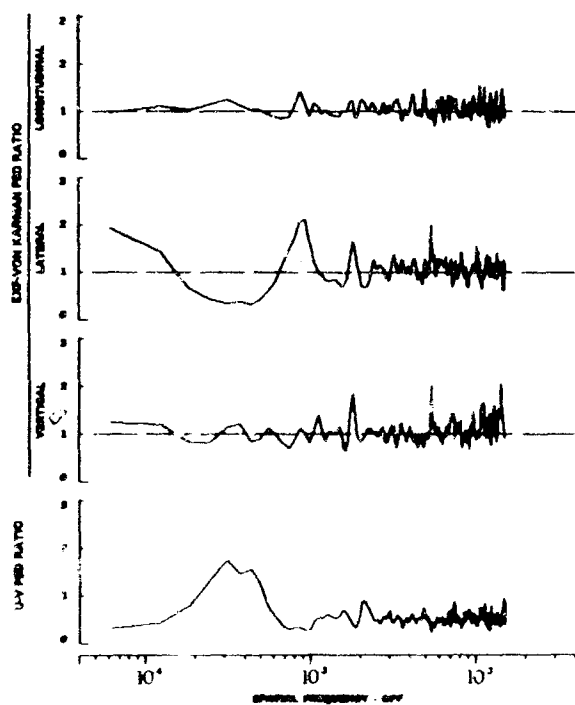
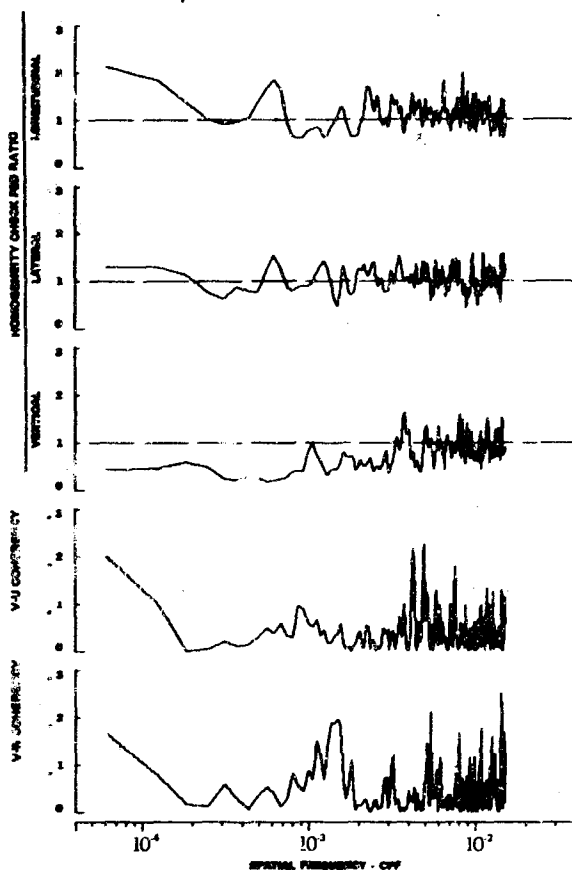
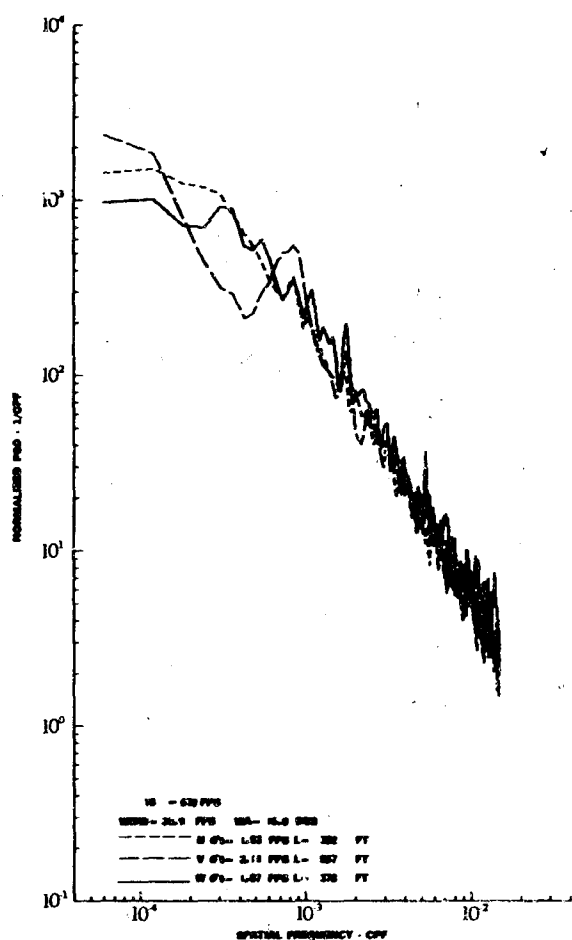
Turbulence Spectra Data For Test 101, Log 1, Category 111343



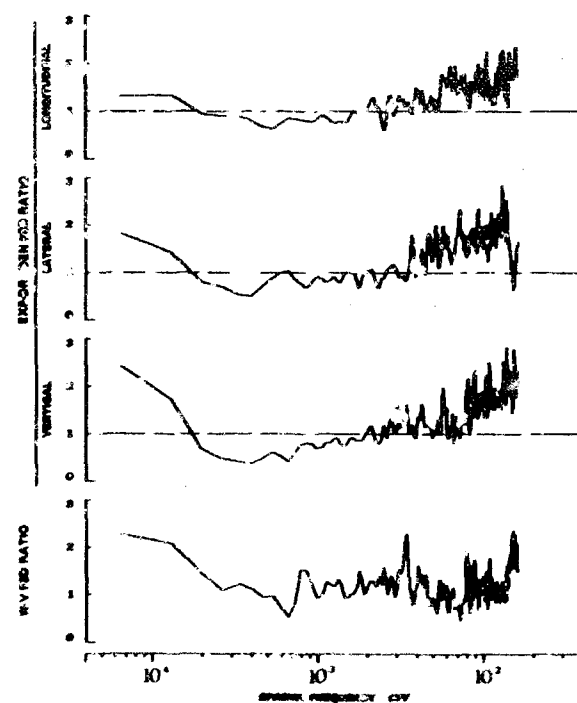
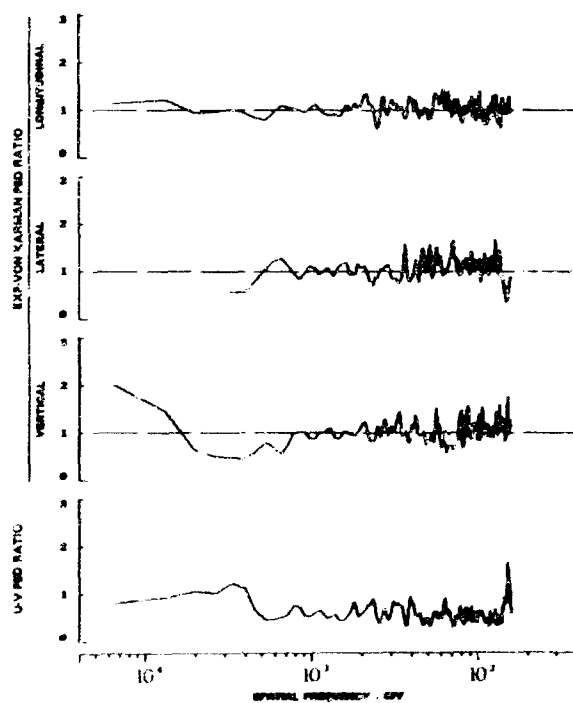
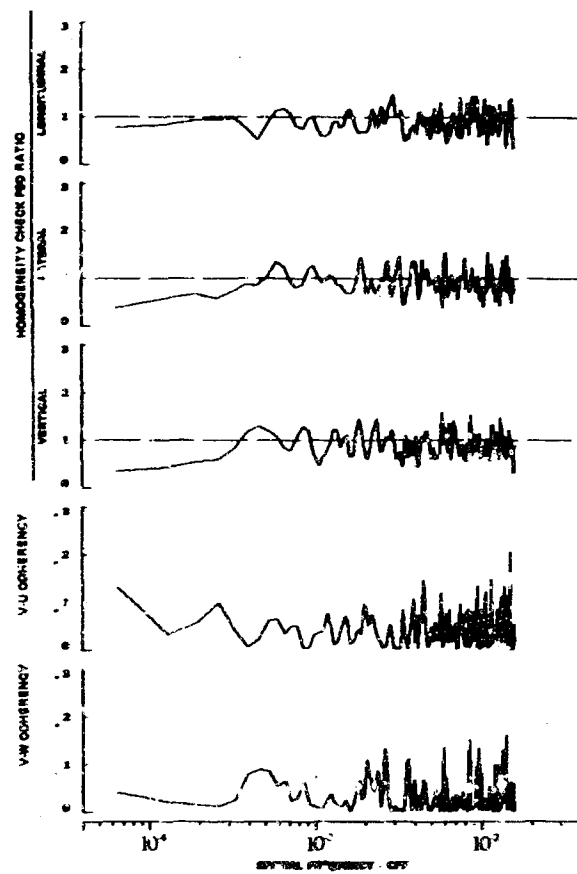
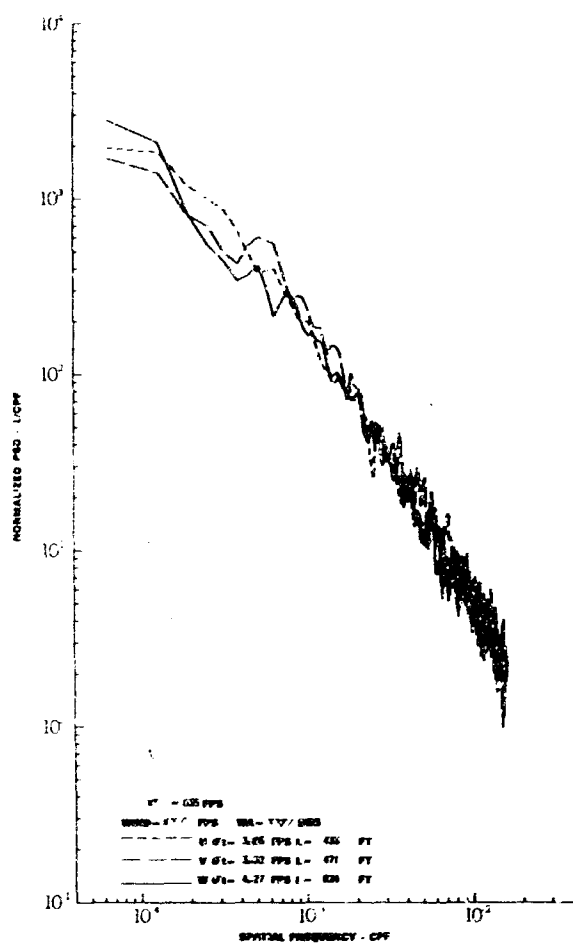


Turbulence Spectra Data for Test 181, Leg 5, Category 113143





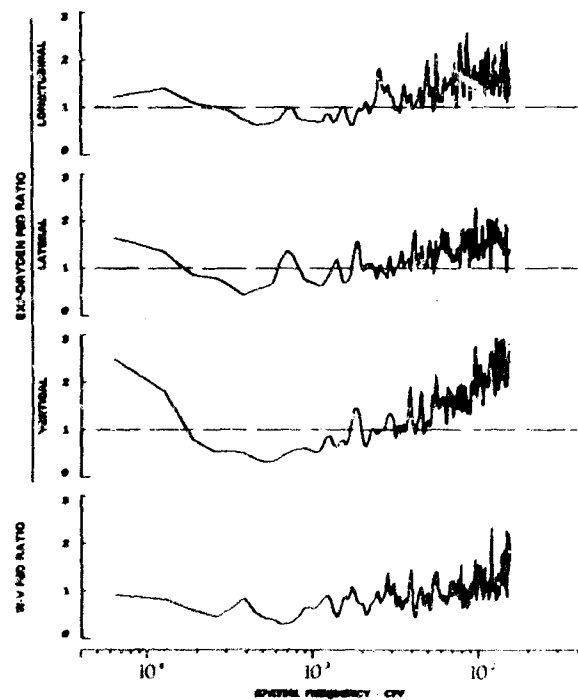
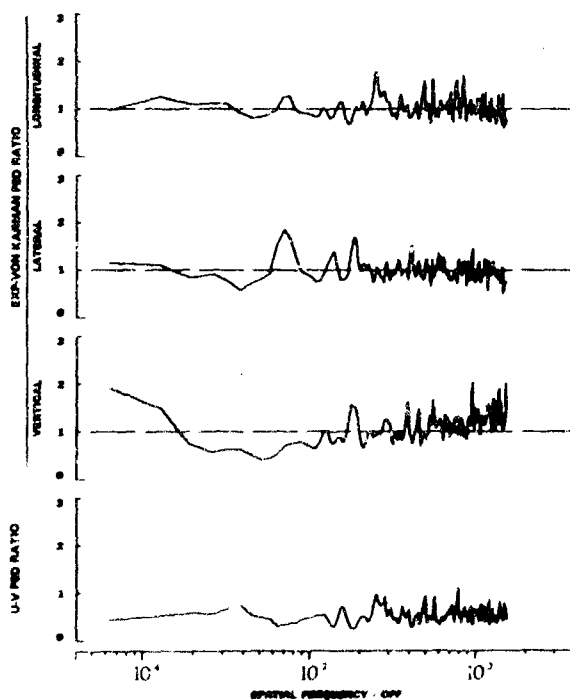
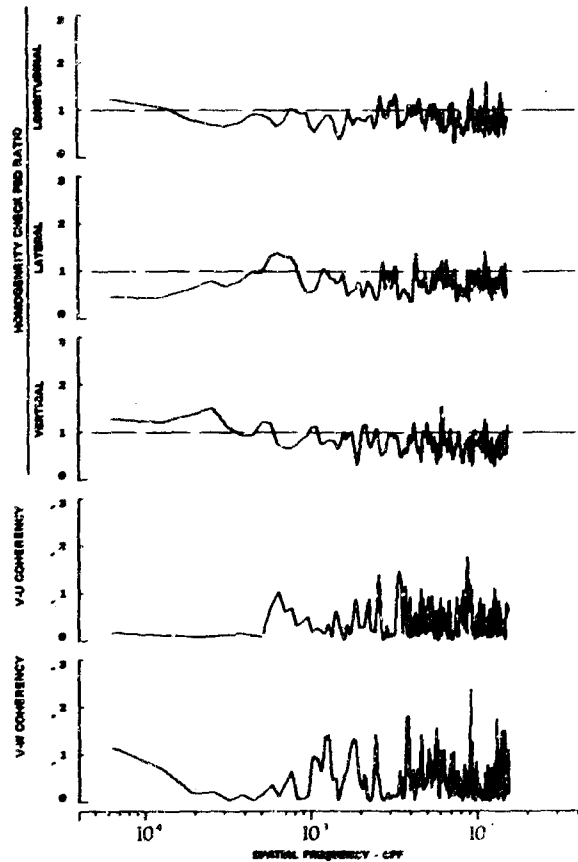
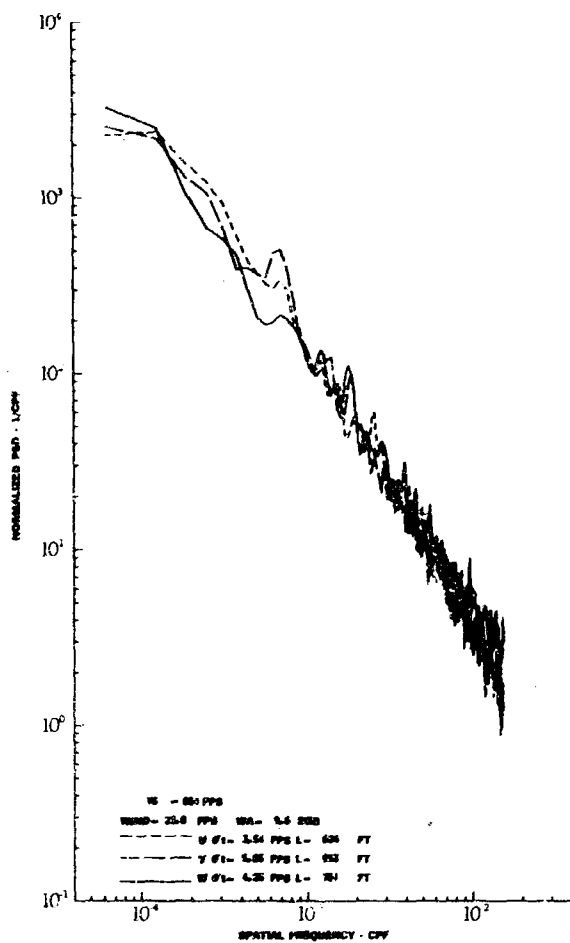
Turbulence Spectra Data For Test 182, Log 8, Category 421243



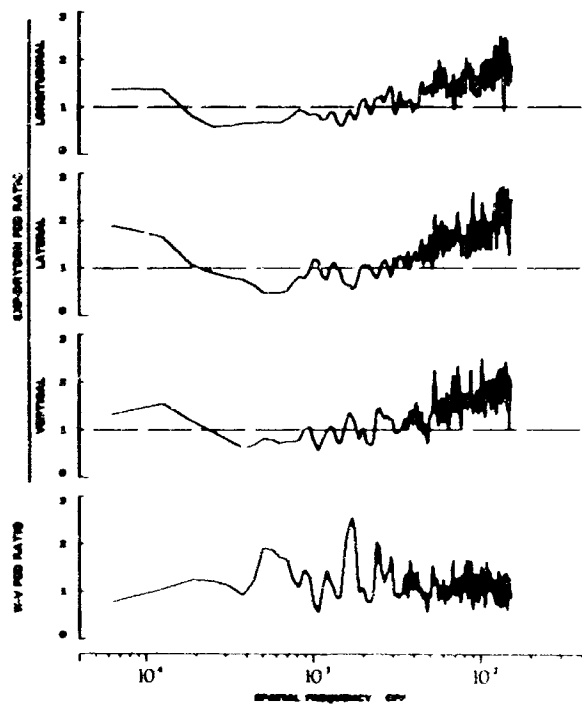
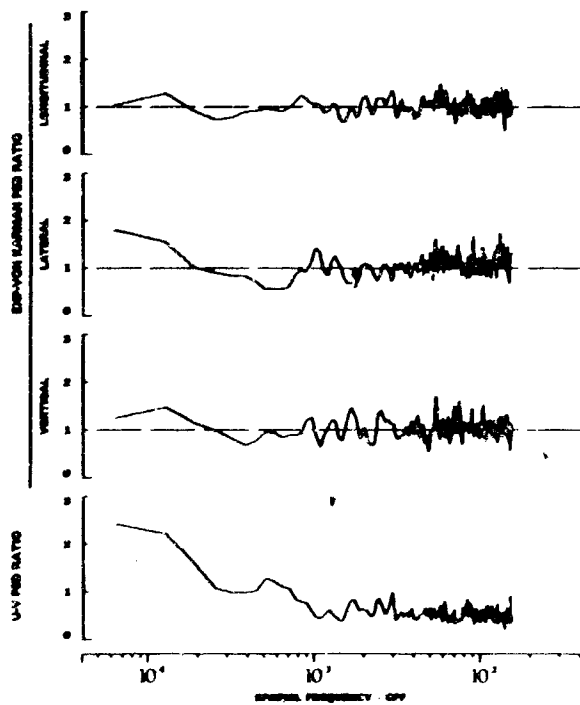
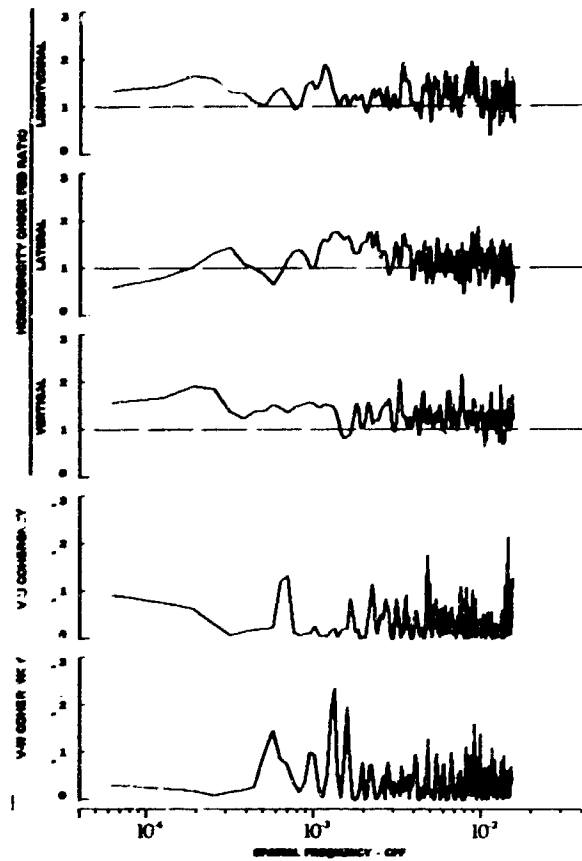
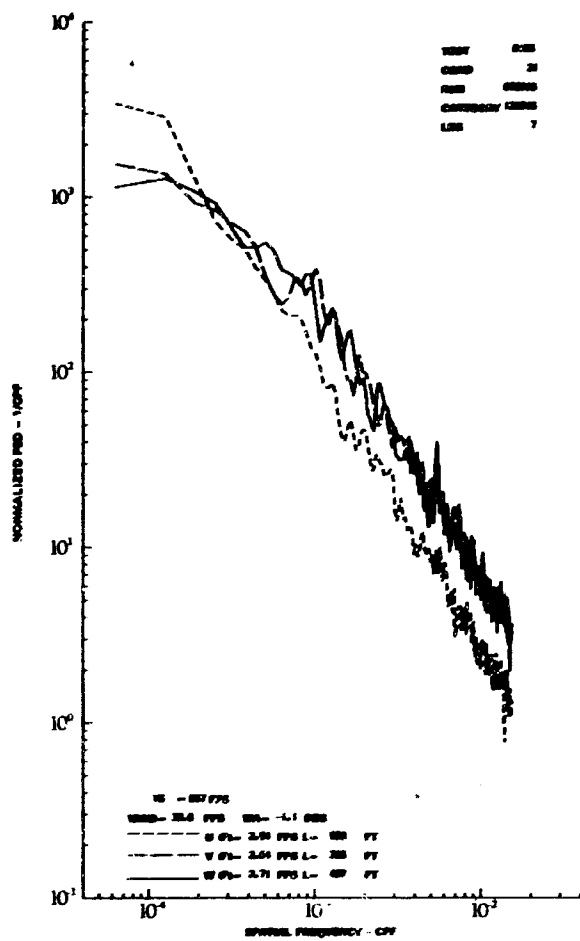
Turbulence Spectra Data For Test 183, Leg 1, Category 122345



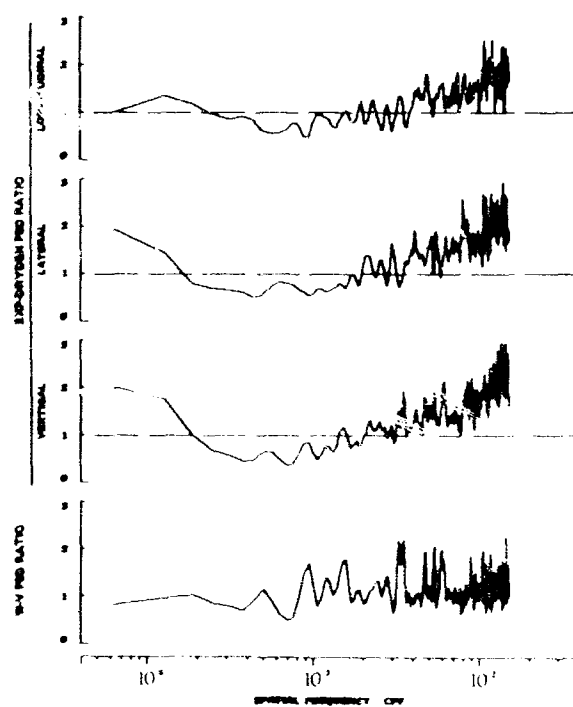
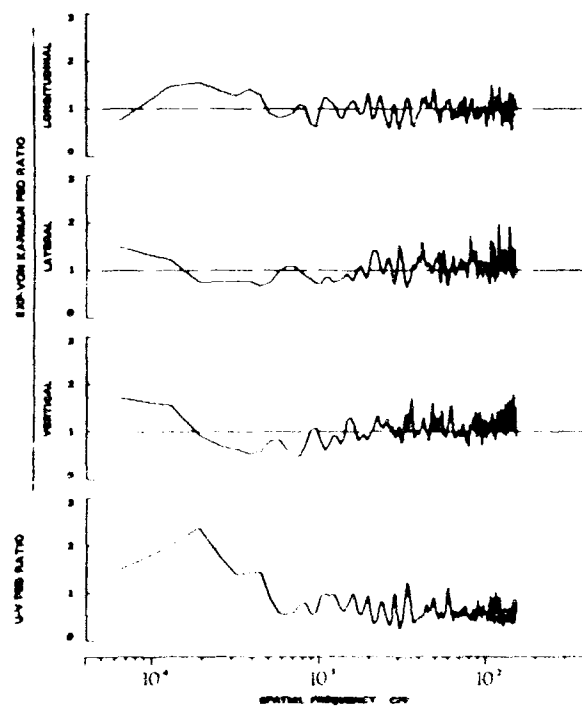
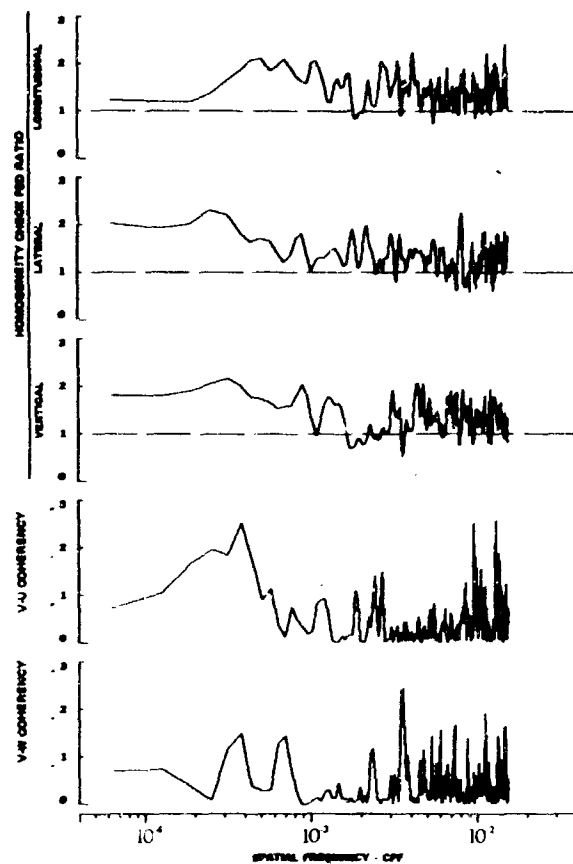
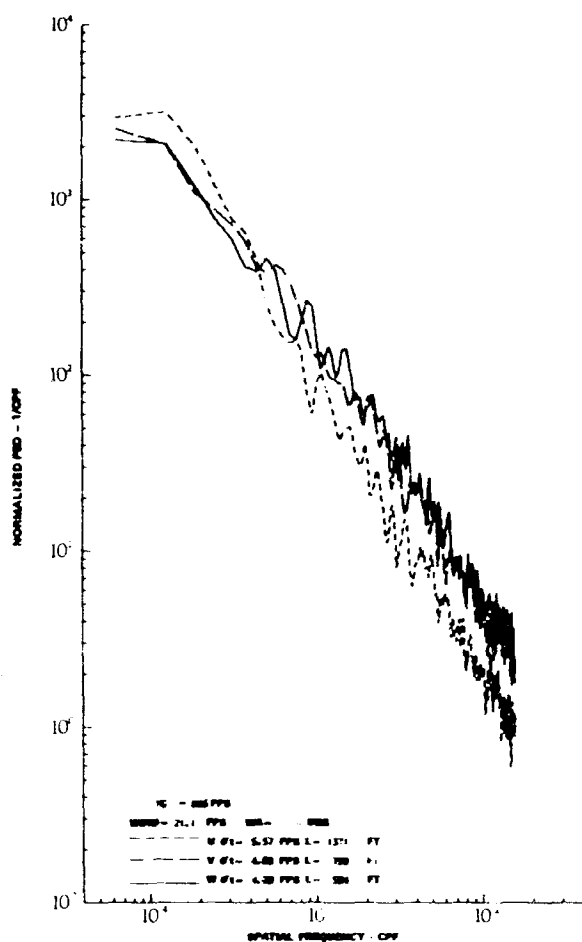




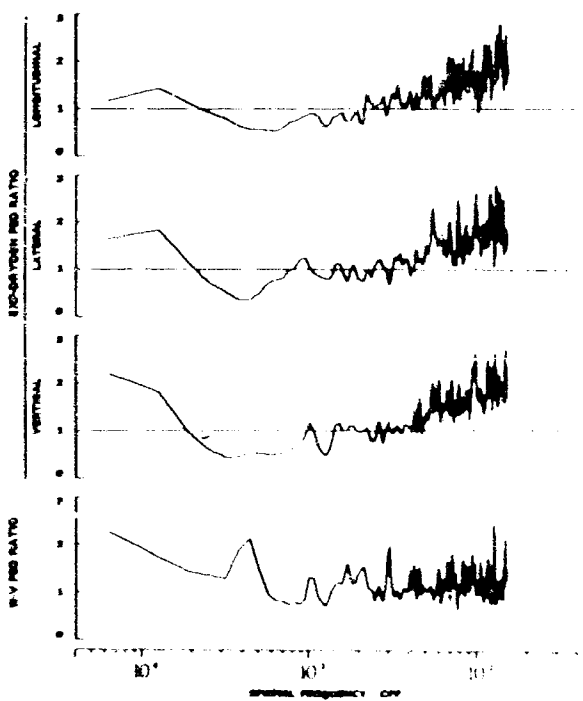
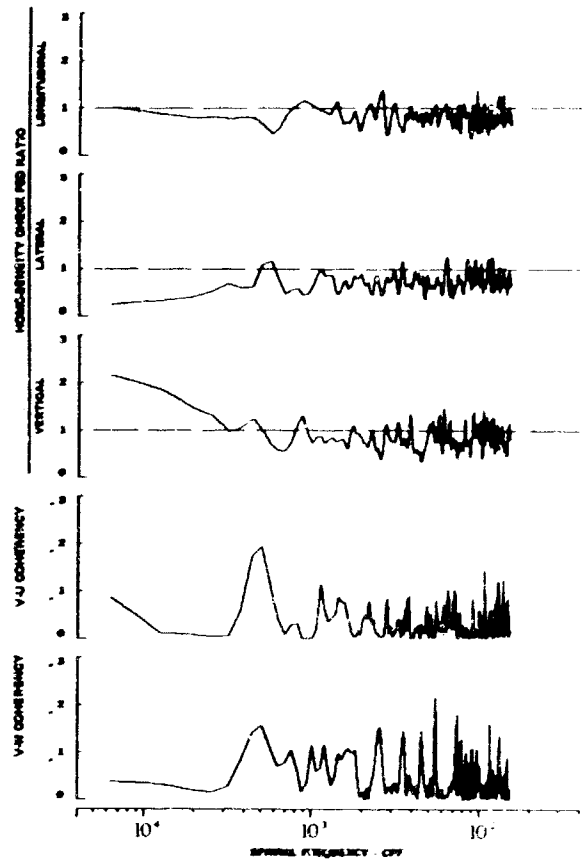
Turbulence Spectra Data For Test 183, Leg 5, Category 122343

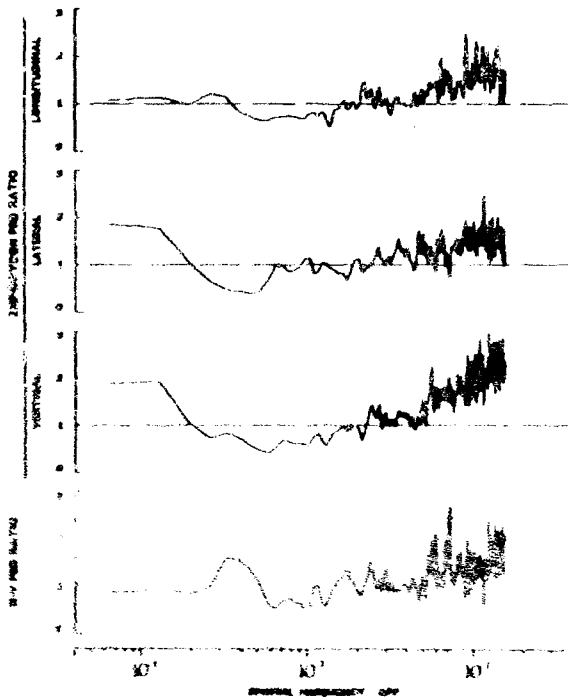
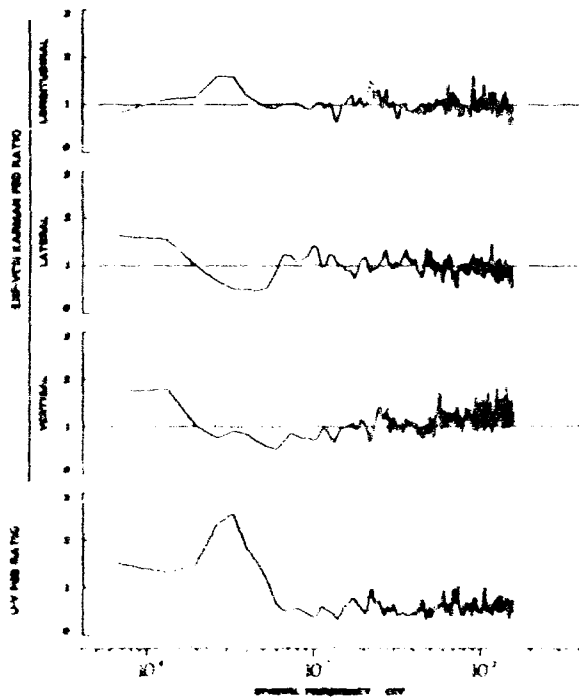
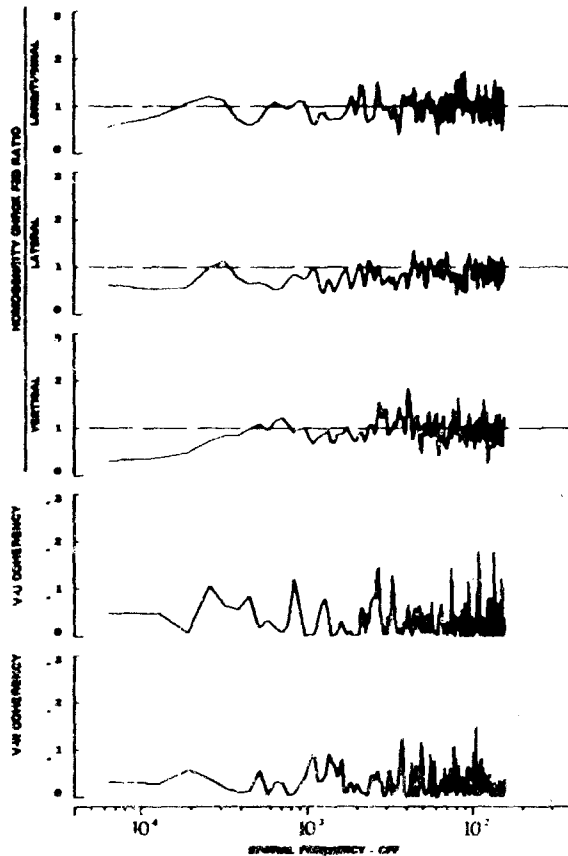
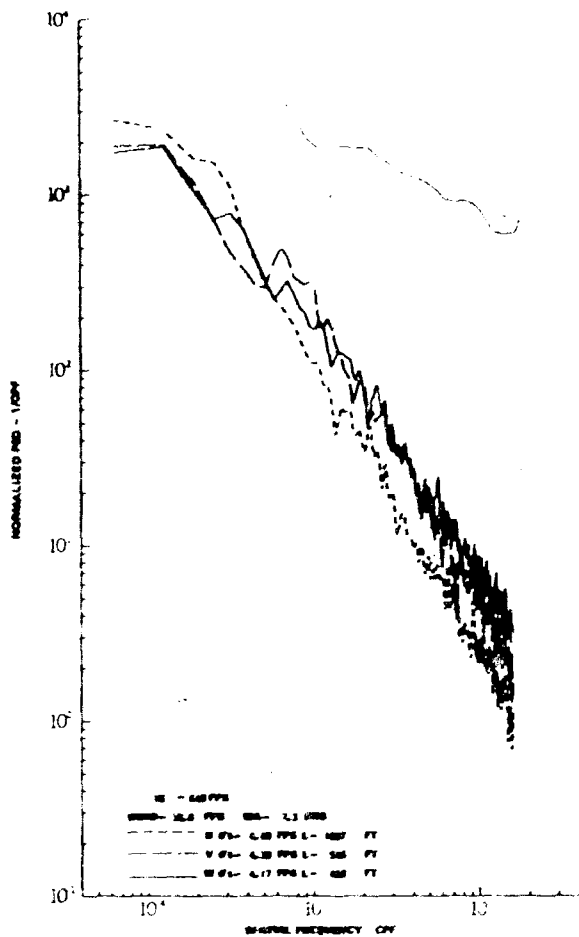


Turbulence Spectra Data For Test 183, Log 7, Category 122343

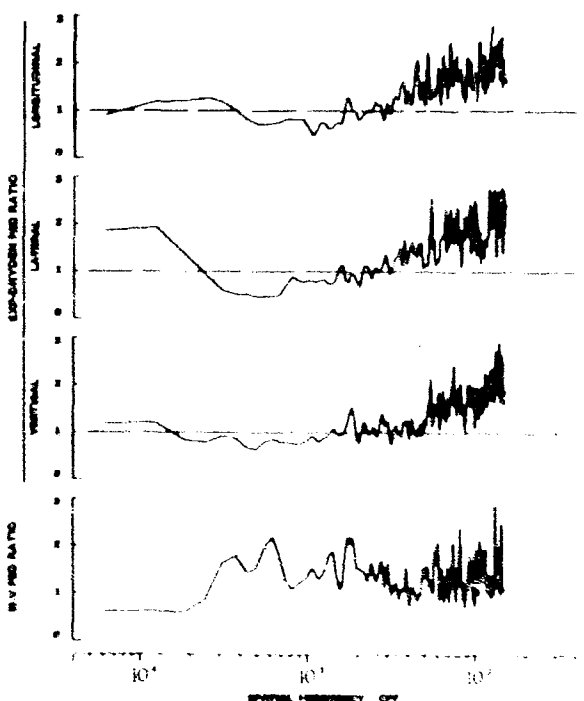
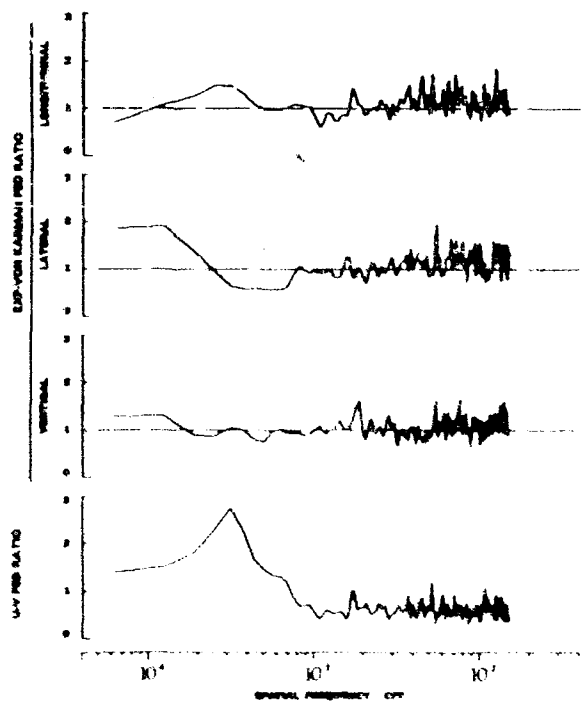
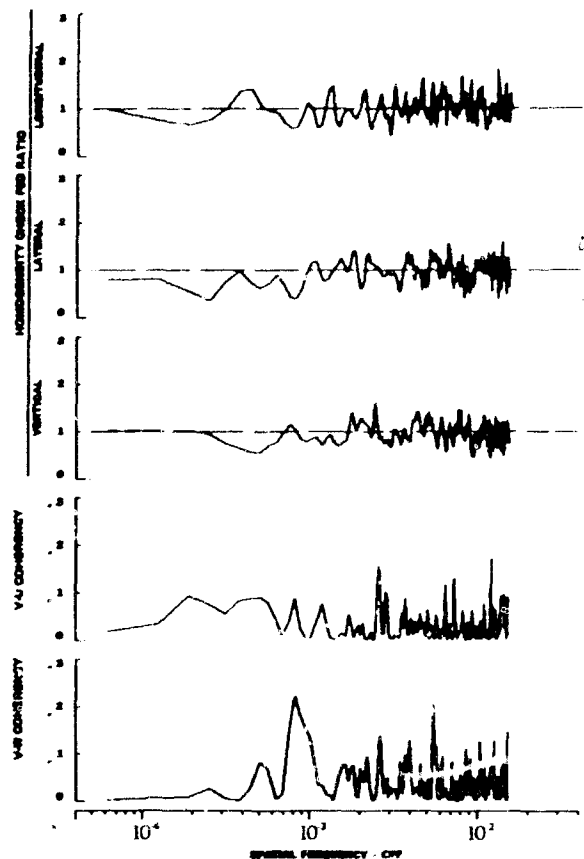
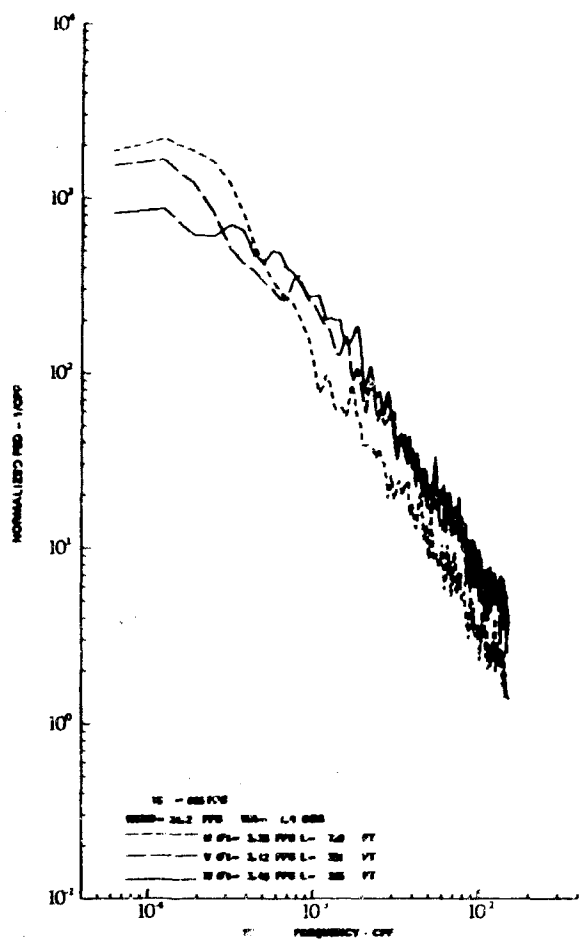


Turbulence Spectra Data For Test 184, Leg 2, Category 112243

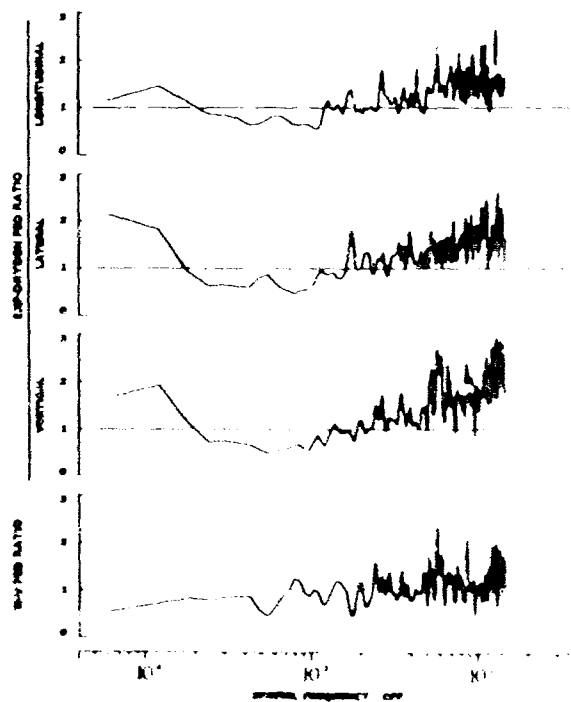
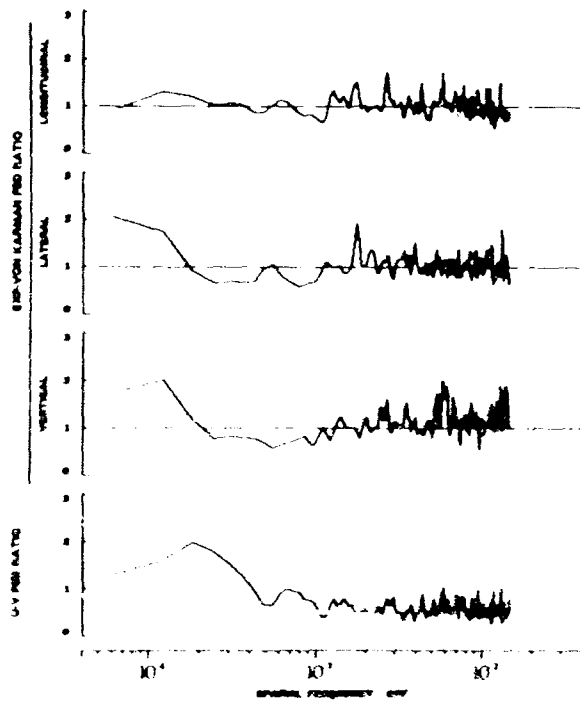
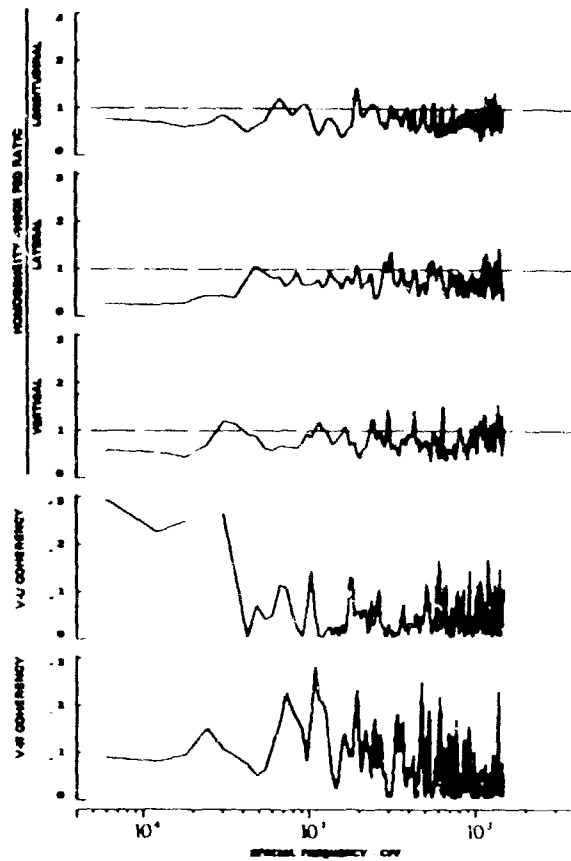
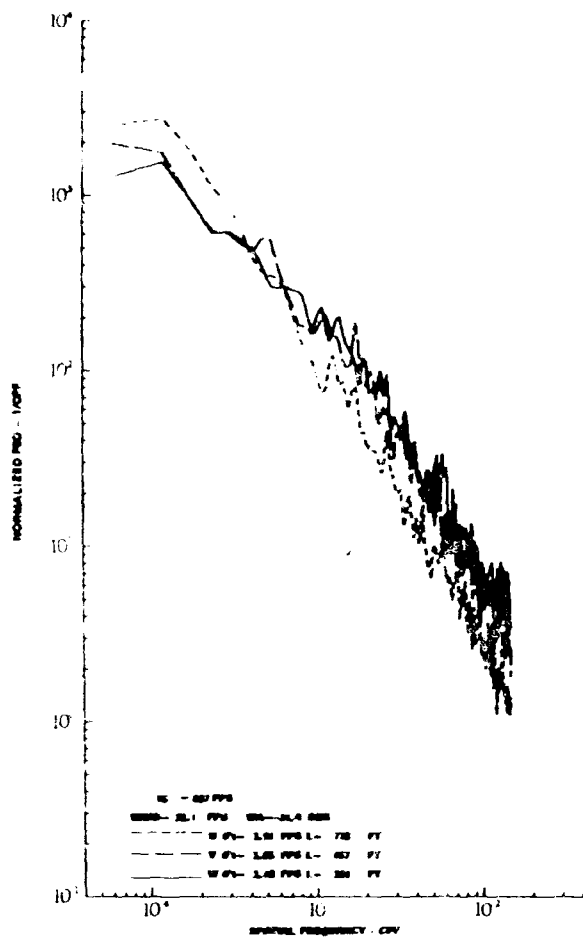




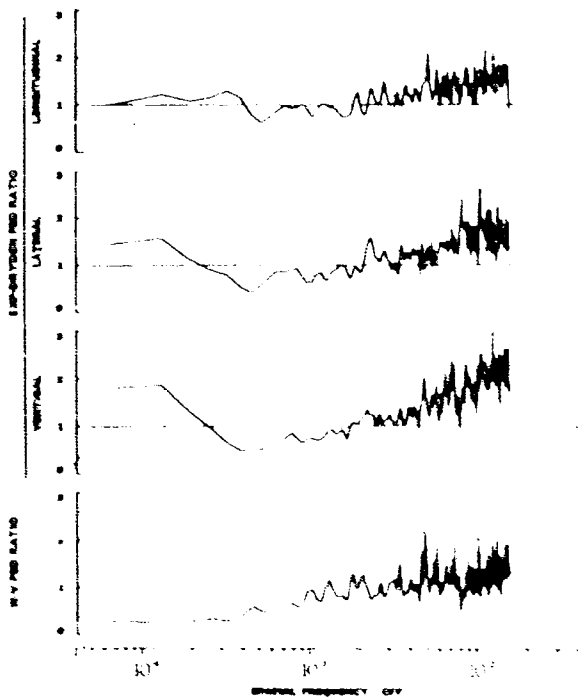
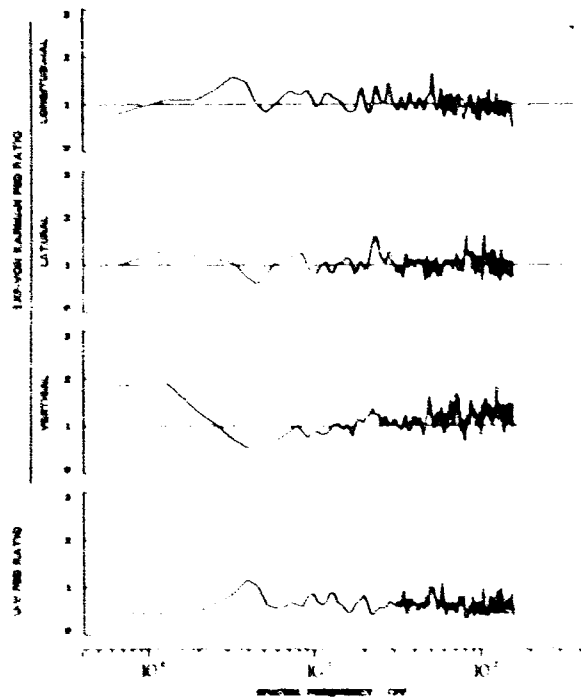
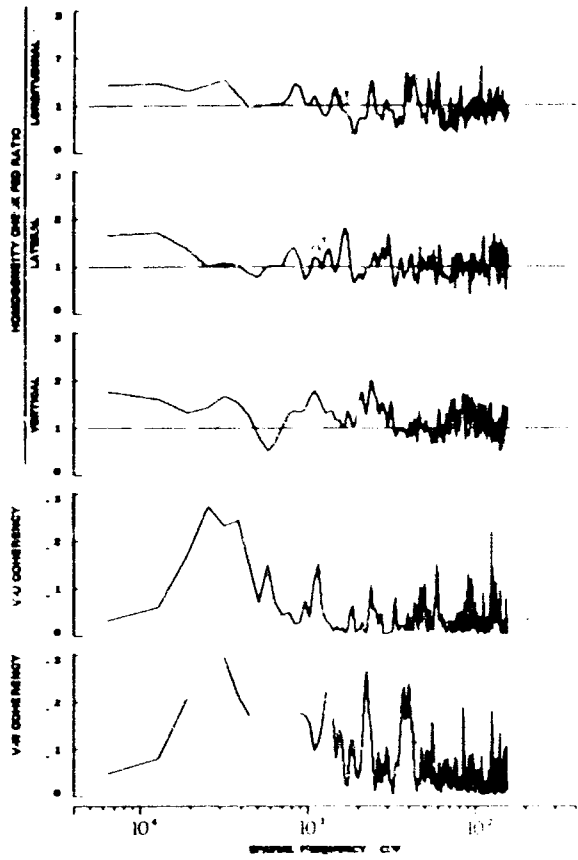
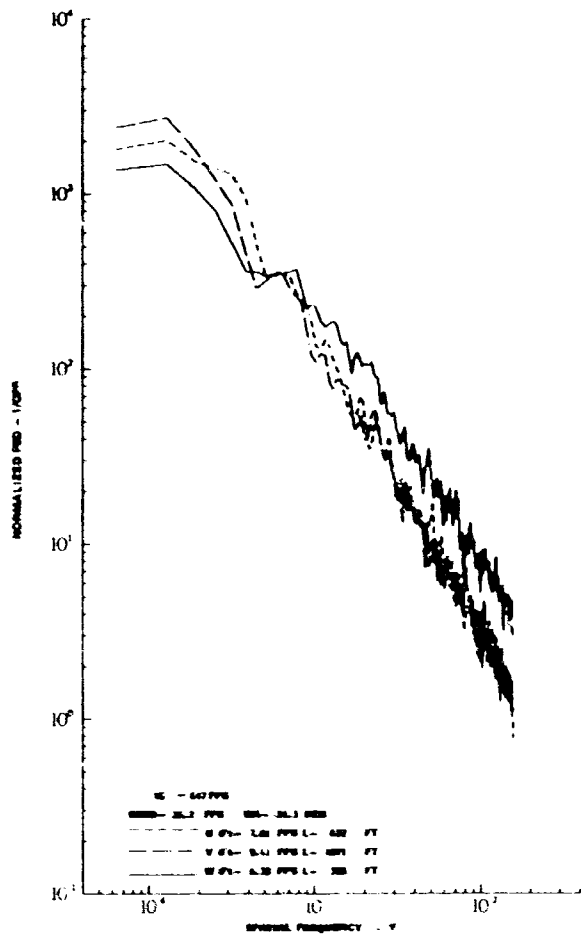
Turbulence Spectra Data for Test 184, Leg 6, Category 112243



Turbulence Spectra Data For Test 184, Log 8, Category 413243

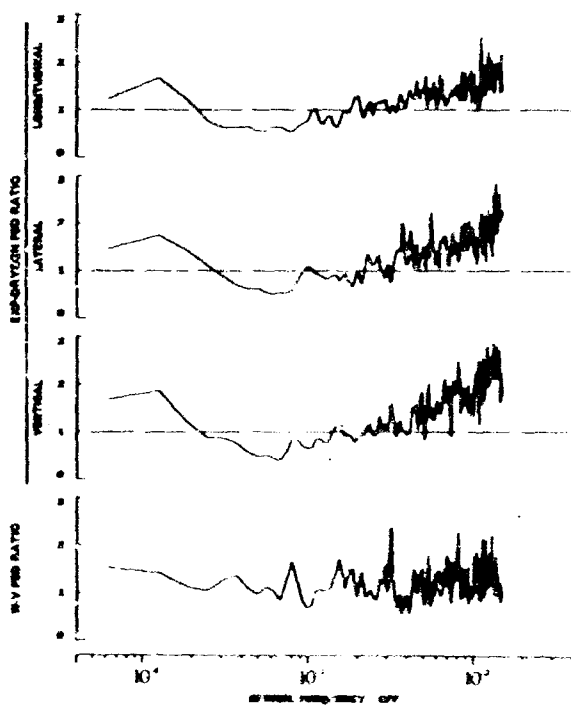
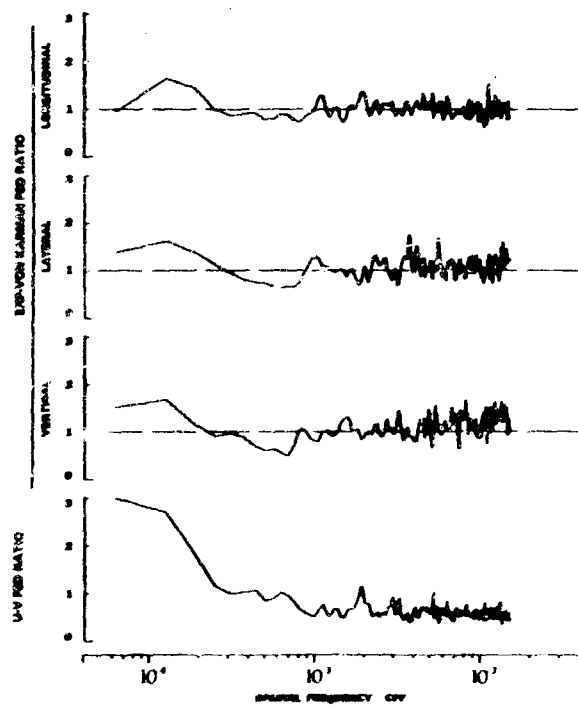
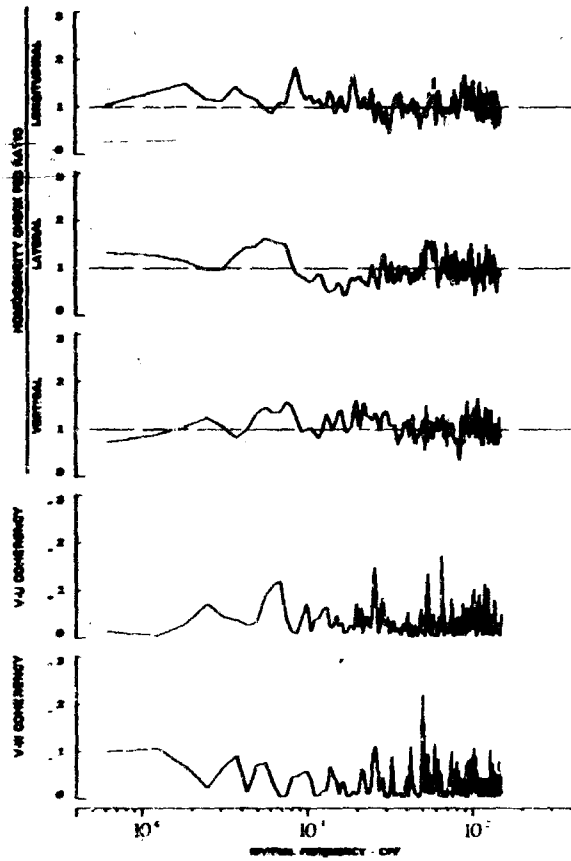
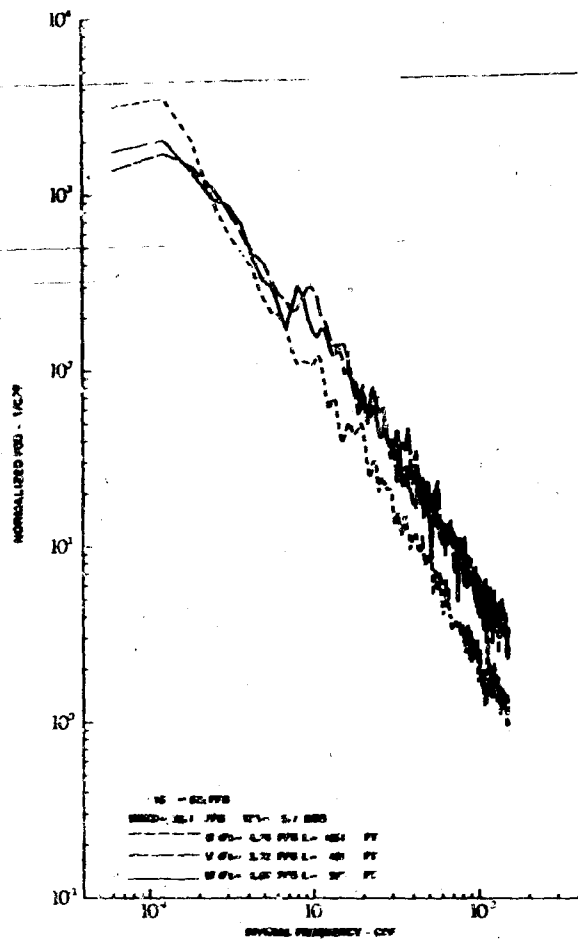


Turbulence Spect. Data For Test 185, Leg 3, Category 113543

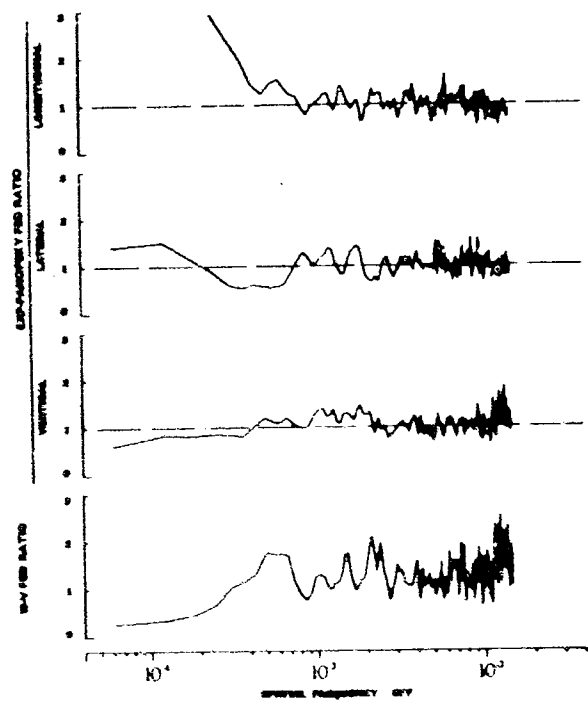
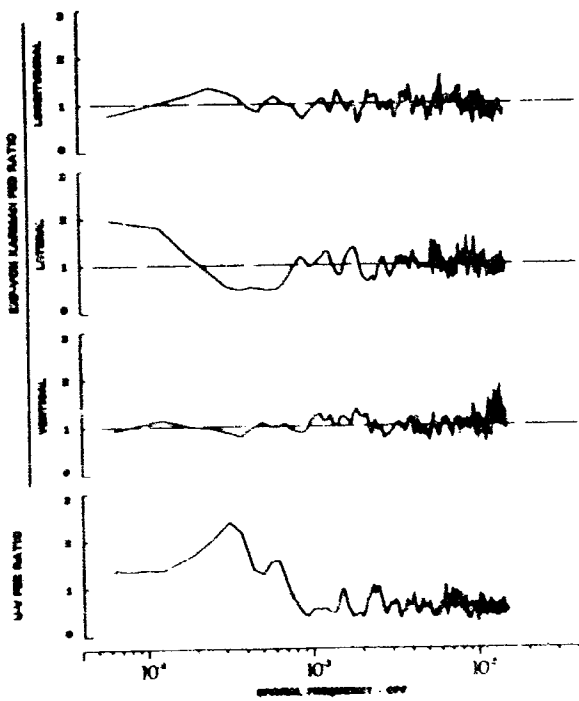
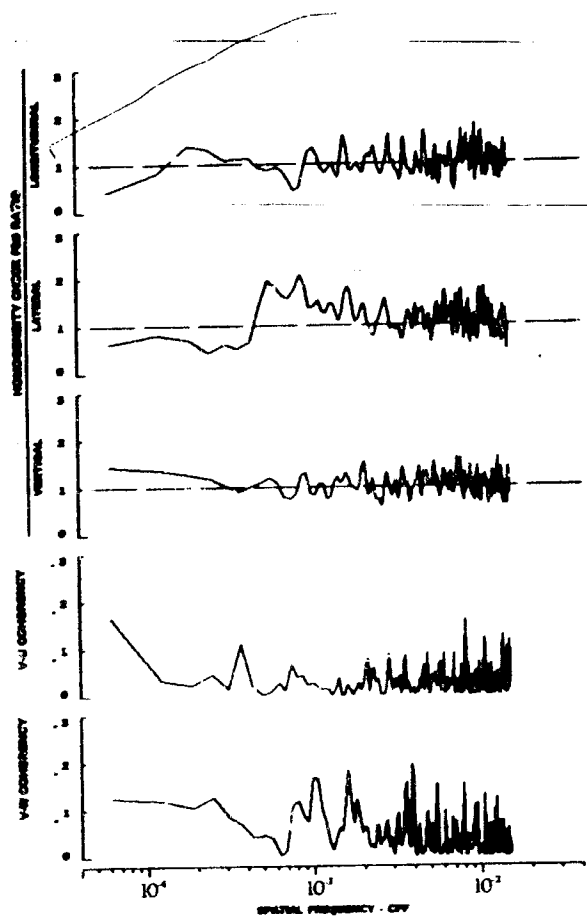
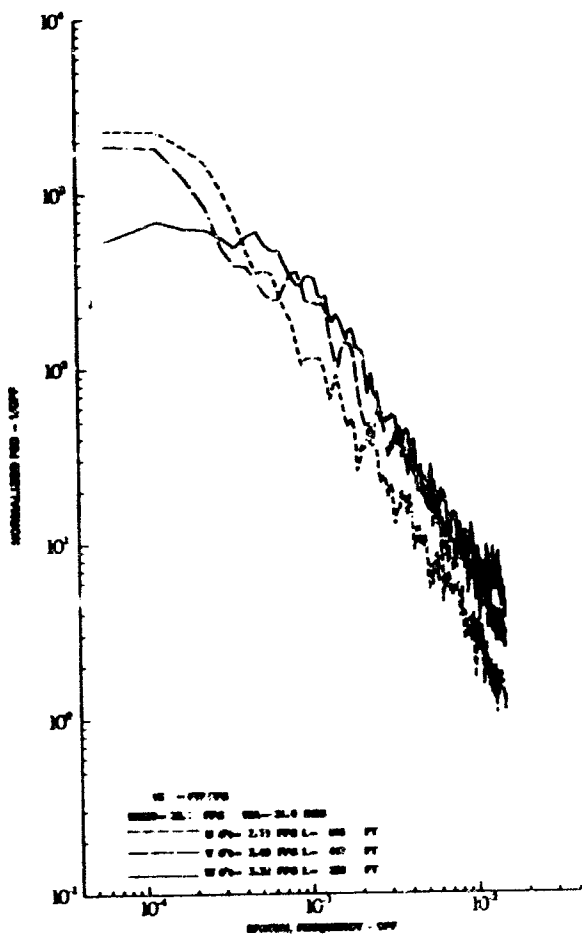


Turbulence Spectra Data For Test 185, Leg 5, Category 112343

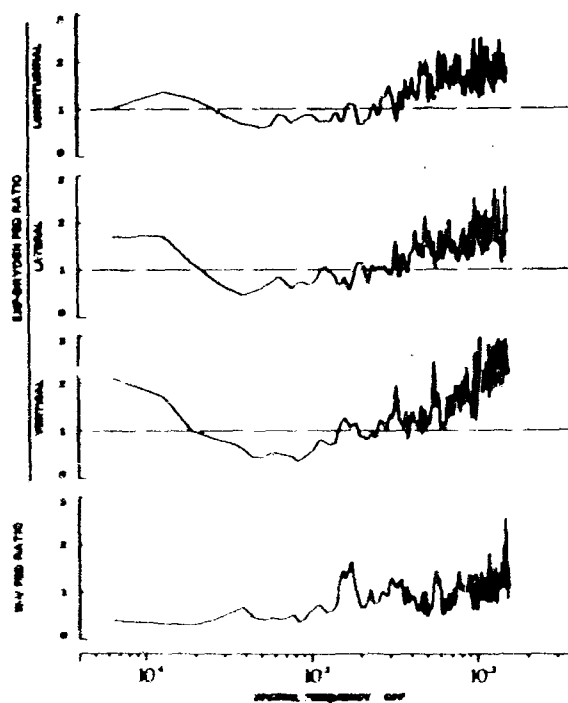
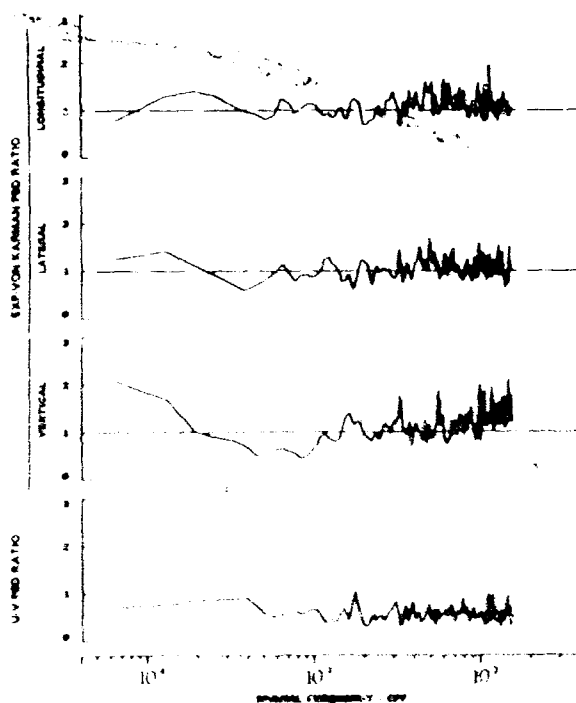
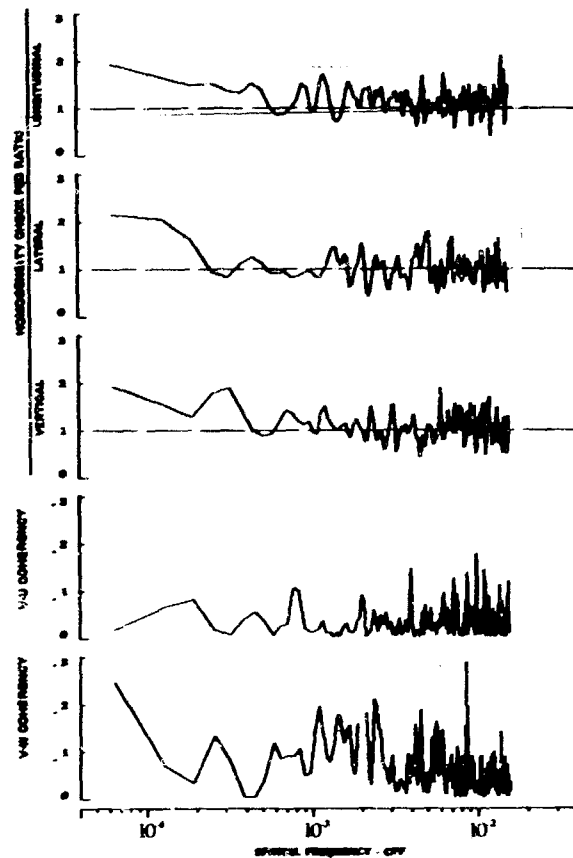
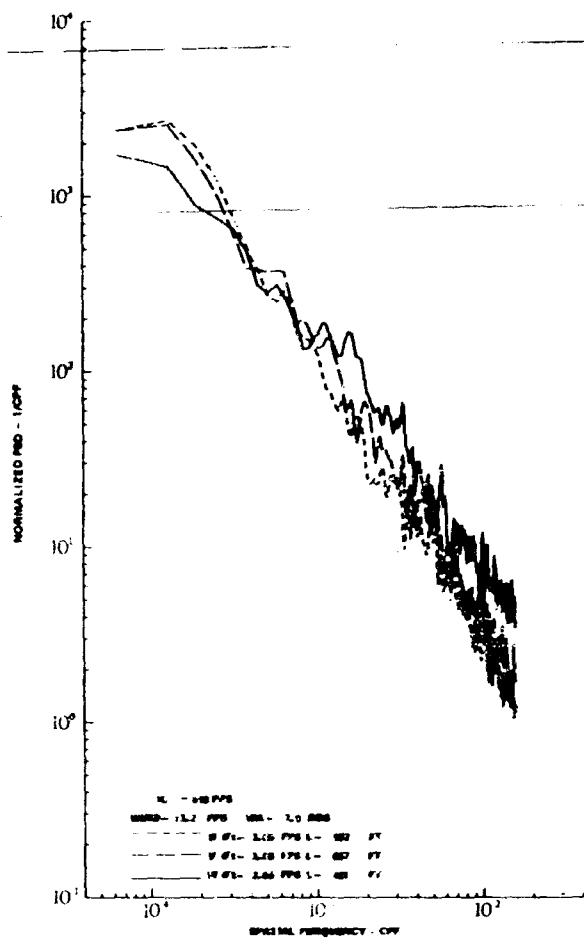




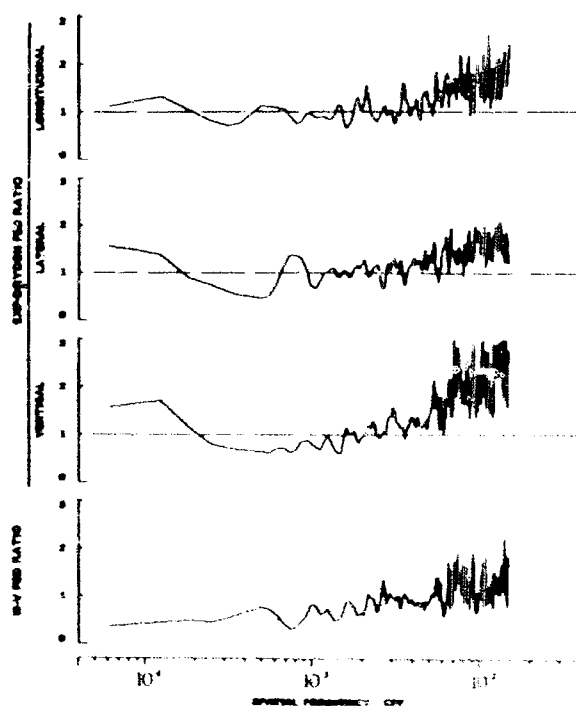
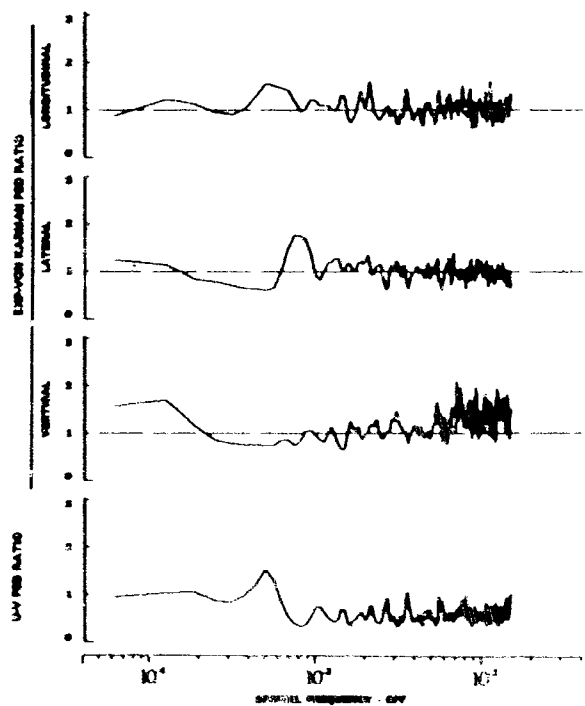
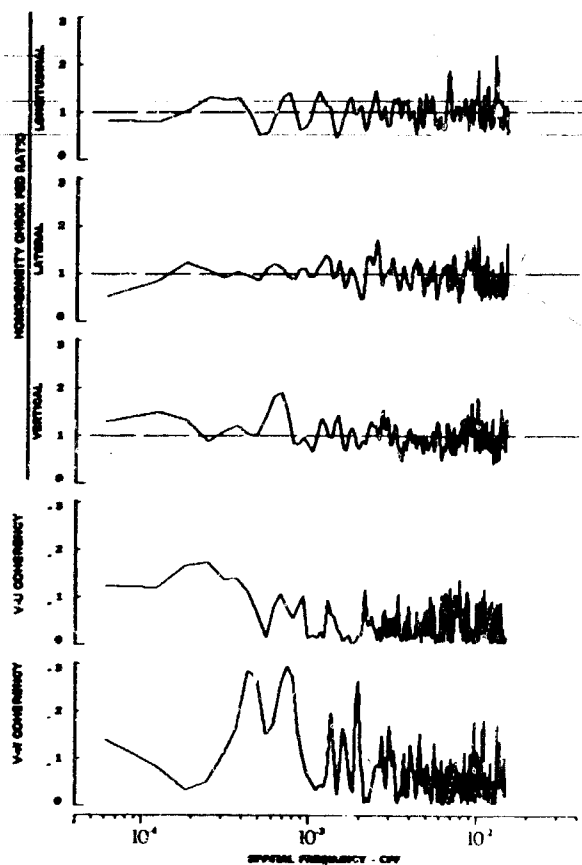
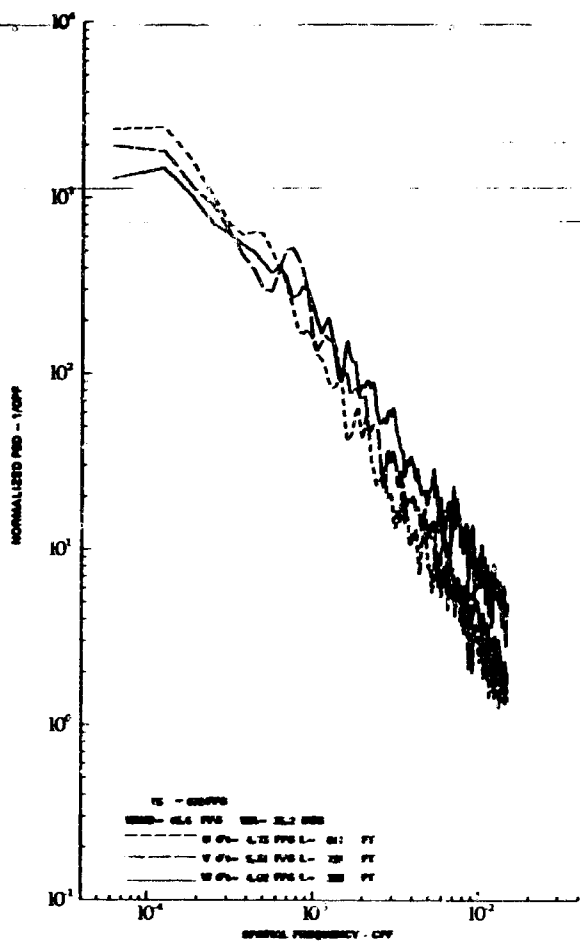
Turbulence Spectra Data for Test 185, Log 7, Category 112343



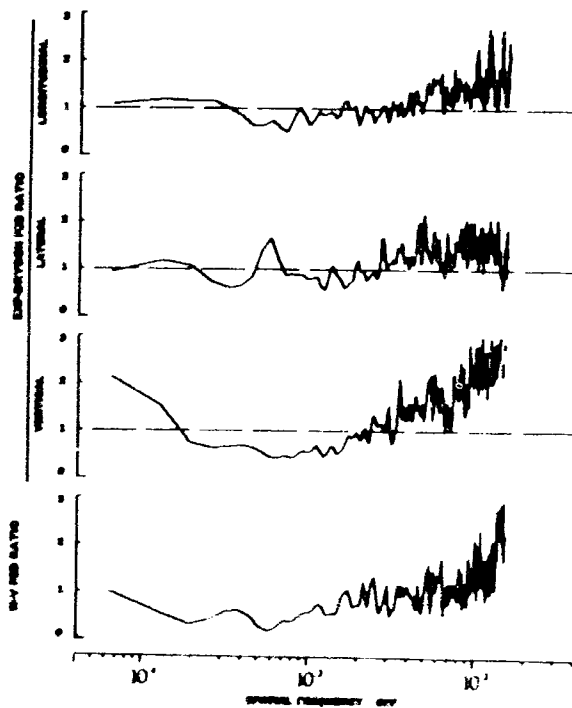
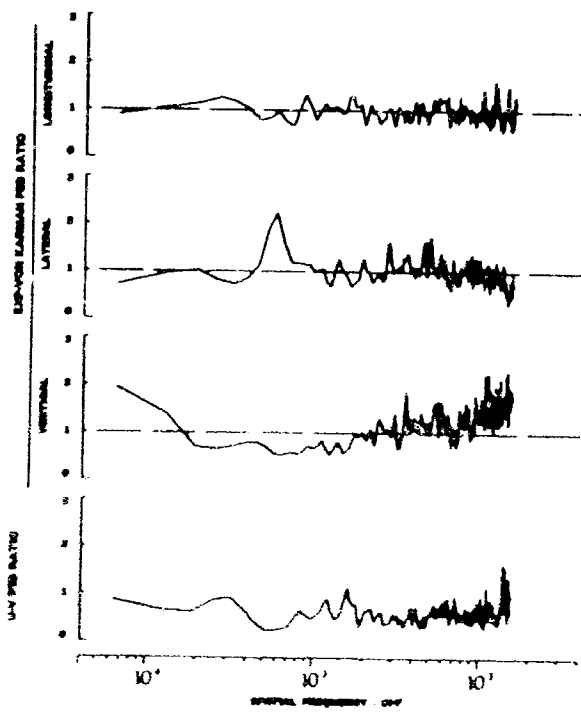
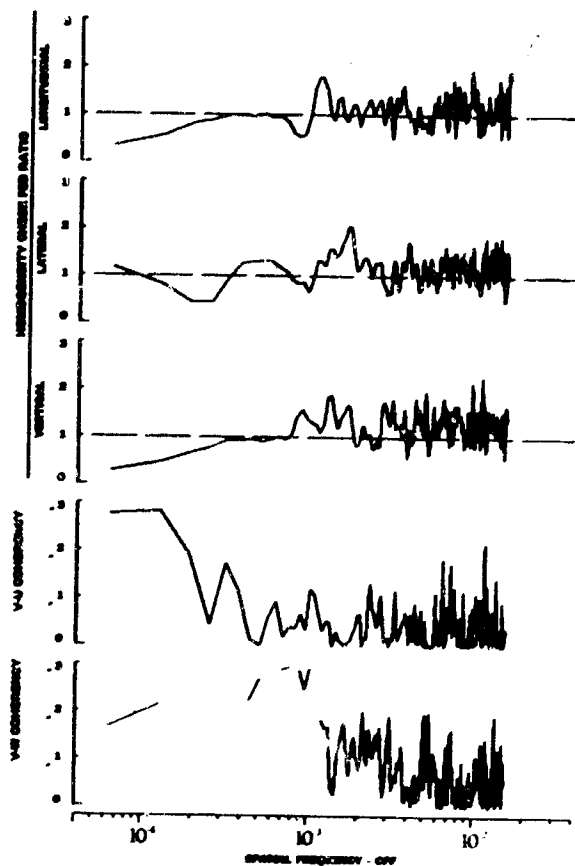
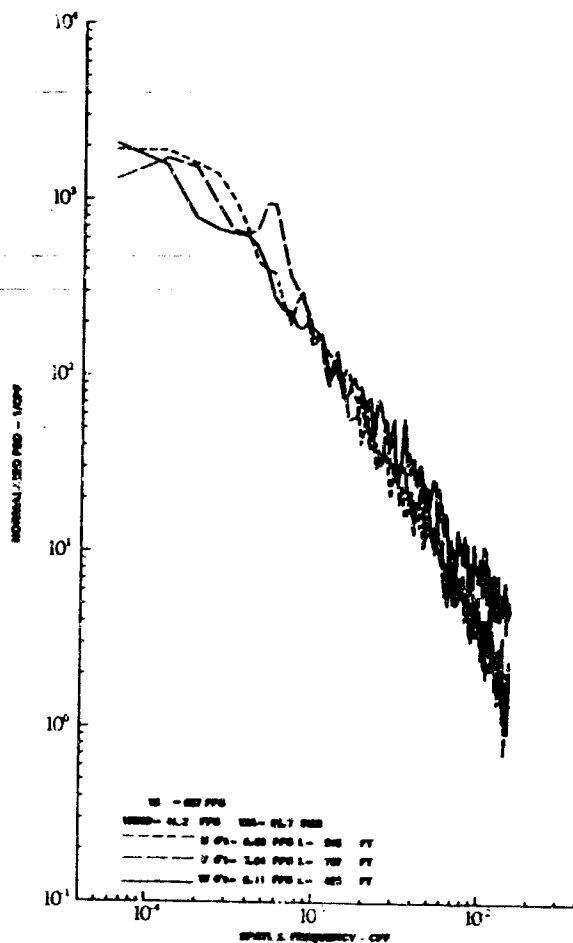
Turbulence Spectra Data For Test 185, Log 8, Category 414343



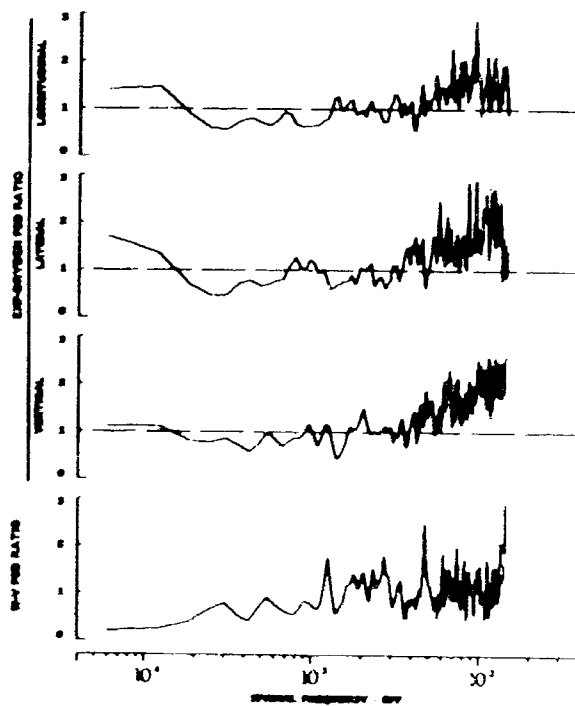
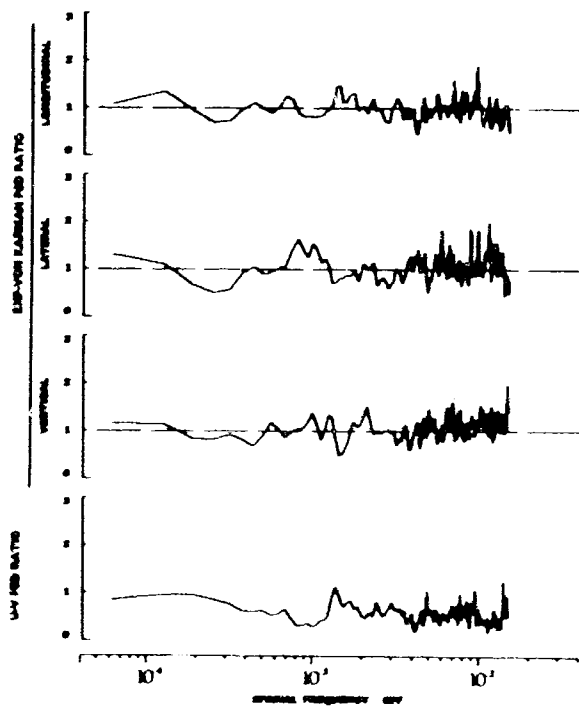
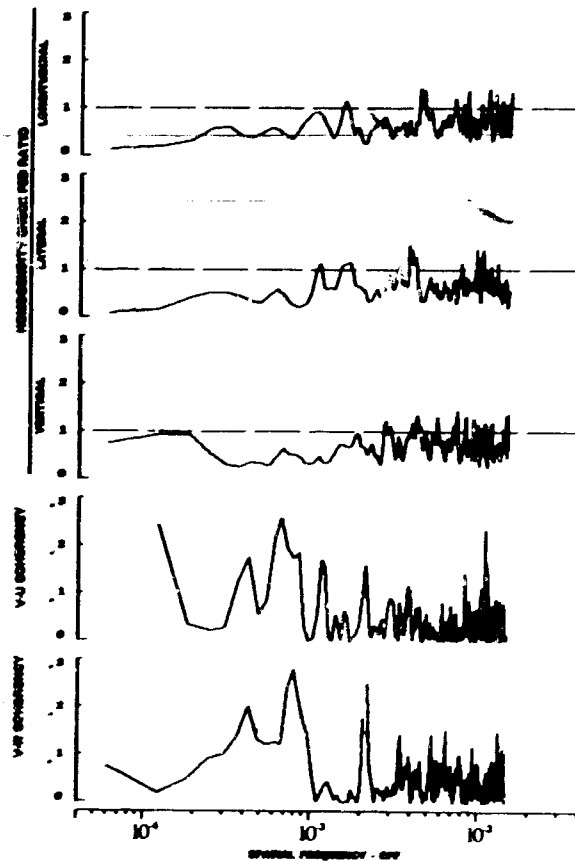
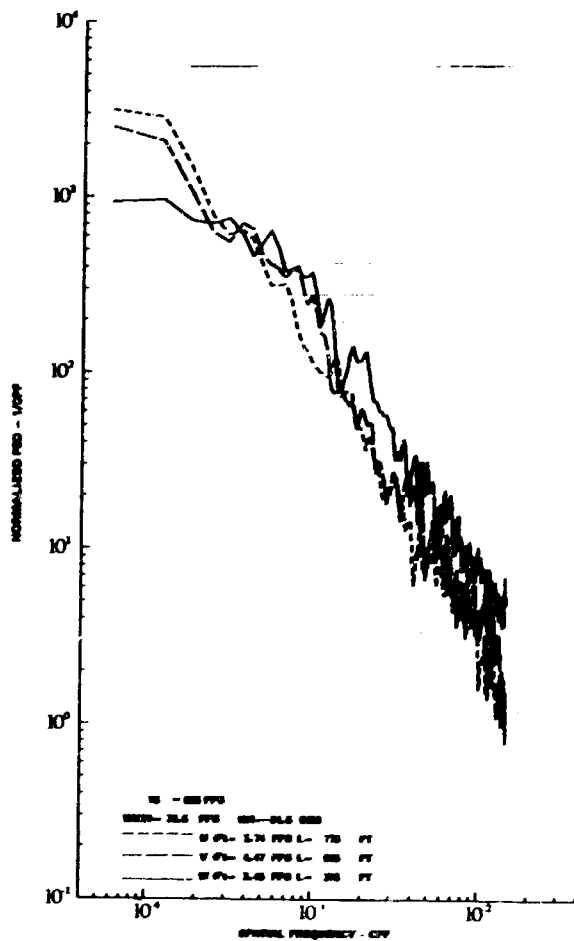
Turbulence Spectra Data For Test 186, Log 4, Category 122143



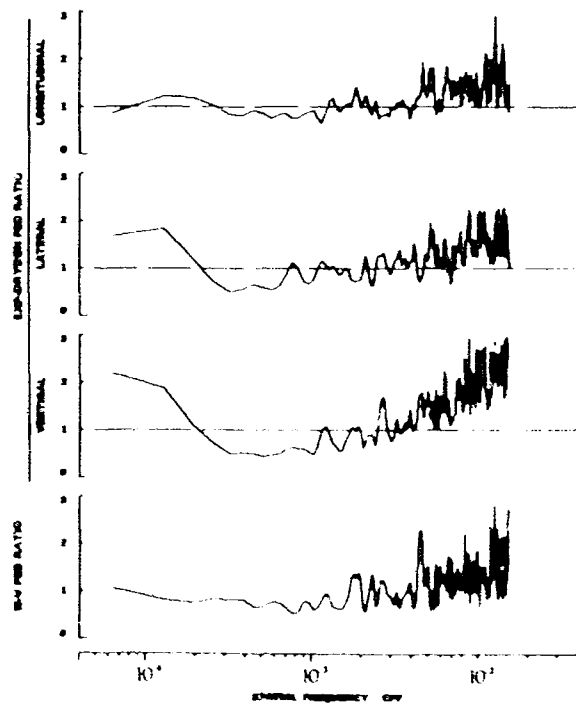
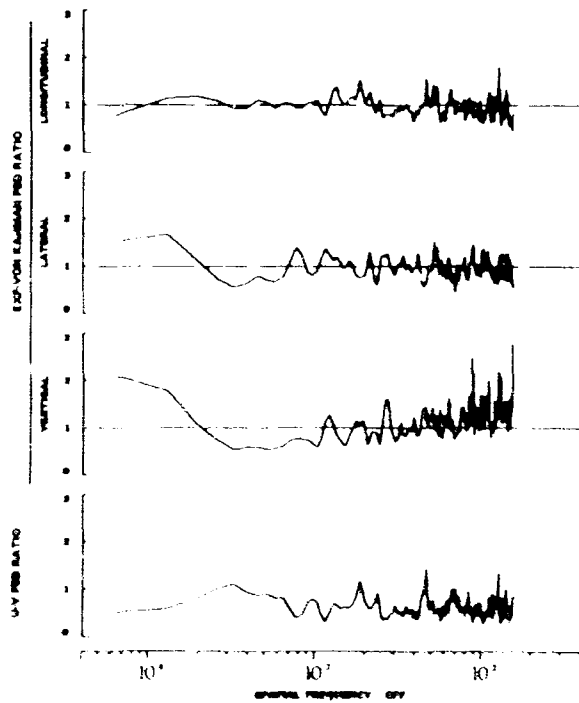
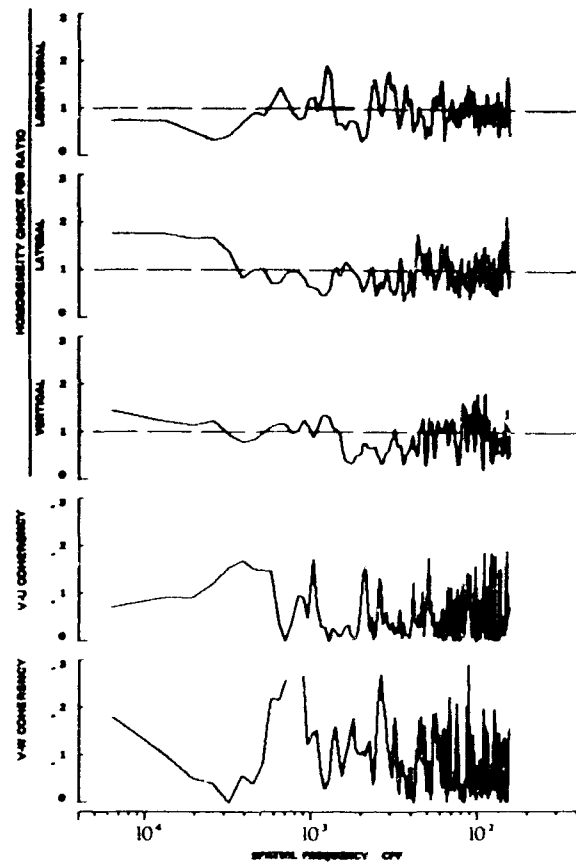
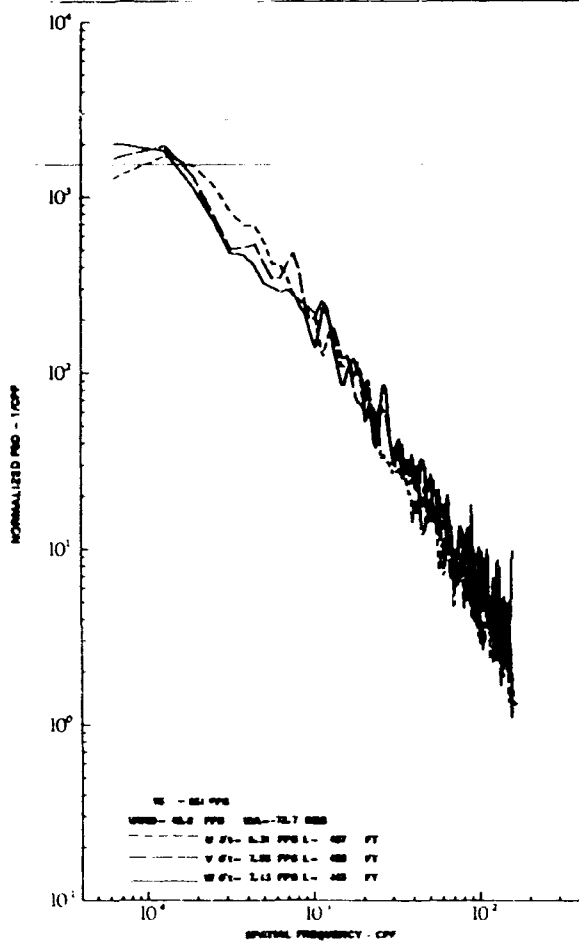
Turbulence Spectra Data For Test 186, Log 6, Category 125143



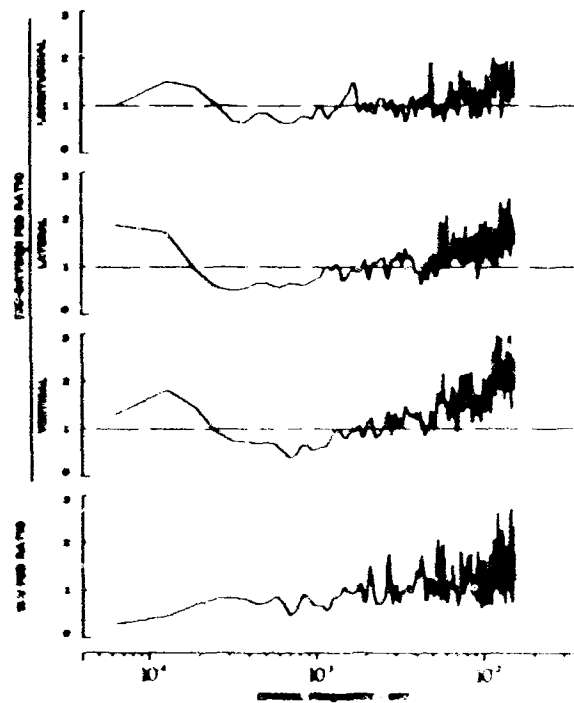
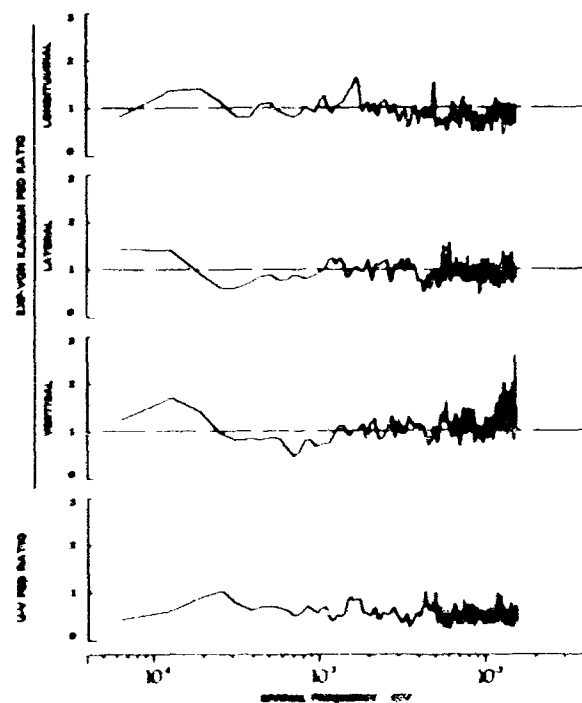
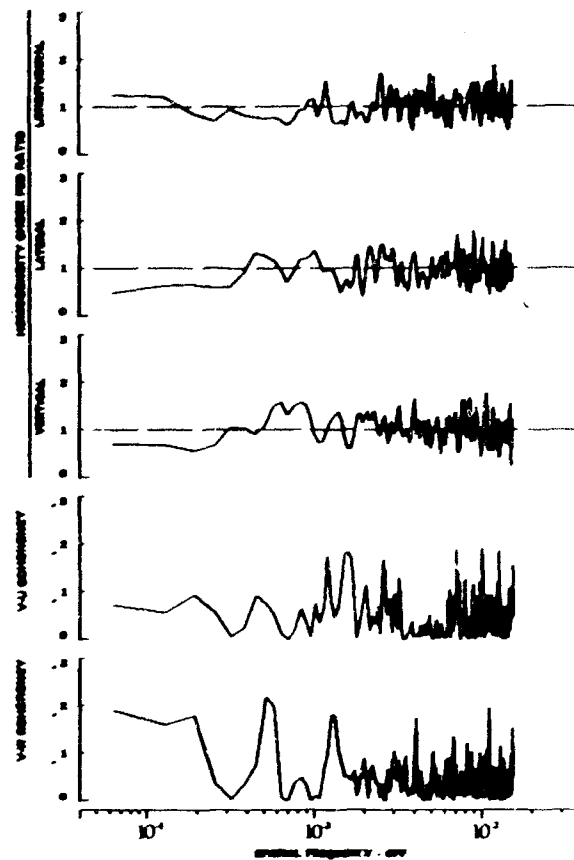
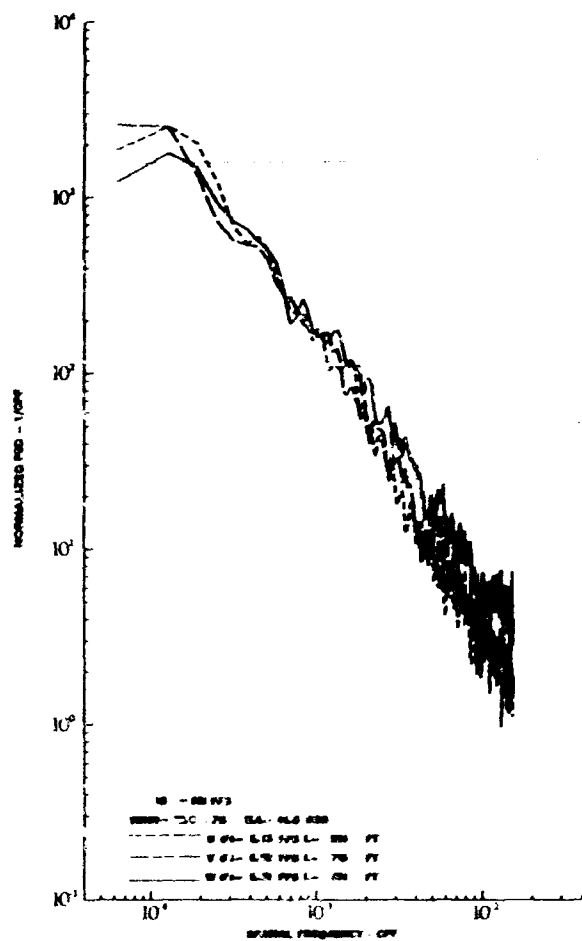
Turbulence Spectra Data For Test 187, Log 1, Category 123243



Turbulence Spectra Data For Test 187, Log 3, Category 121243



Turbulence Spectra Data For Test 187, Leg 5, Category 123243



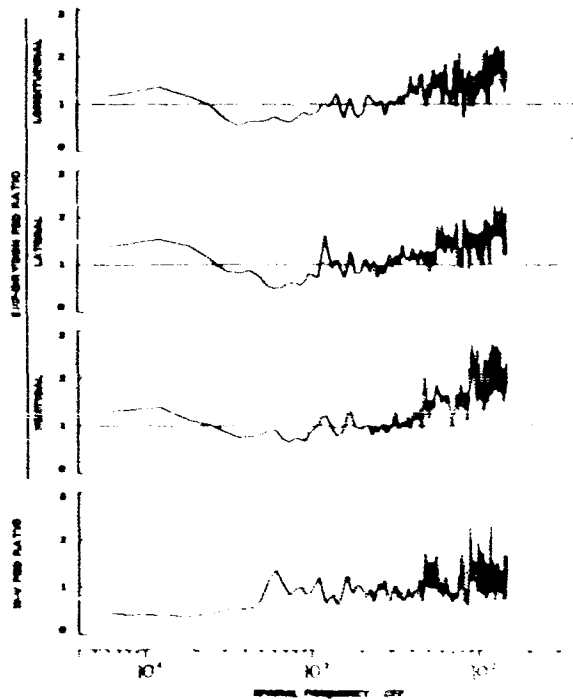
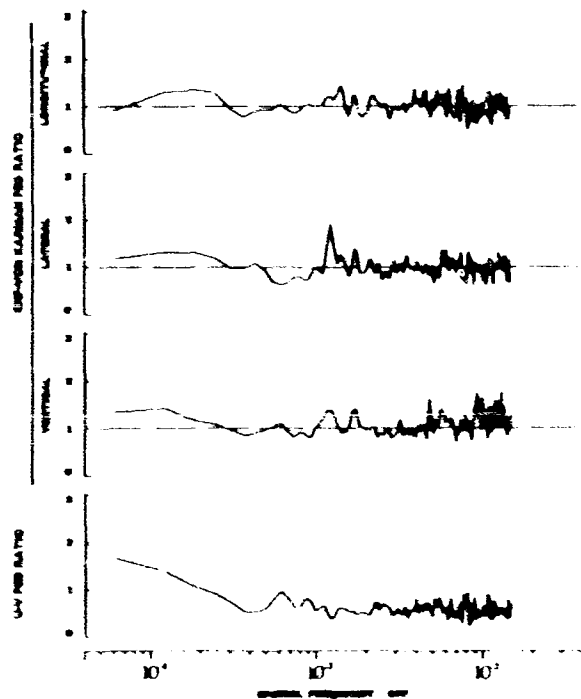
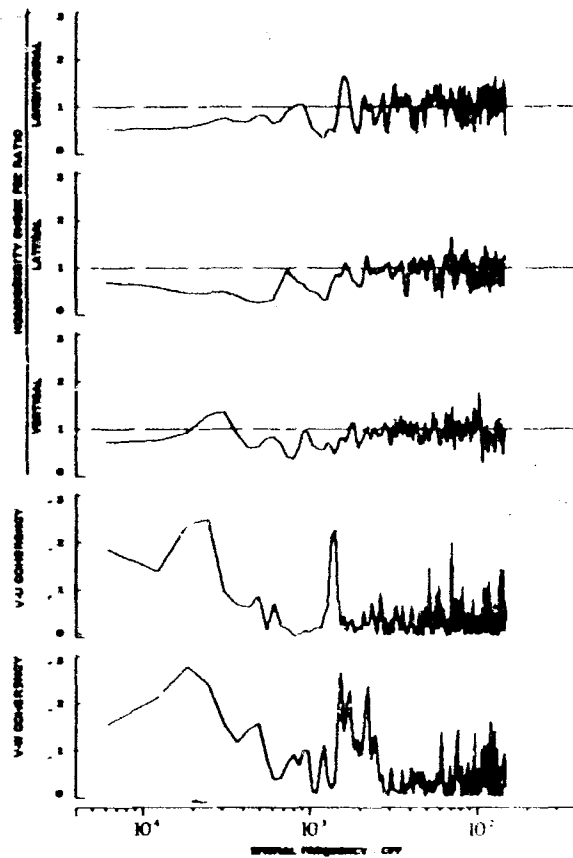
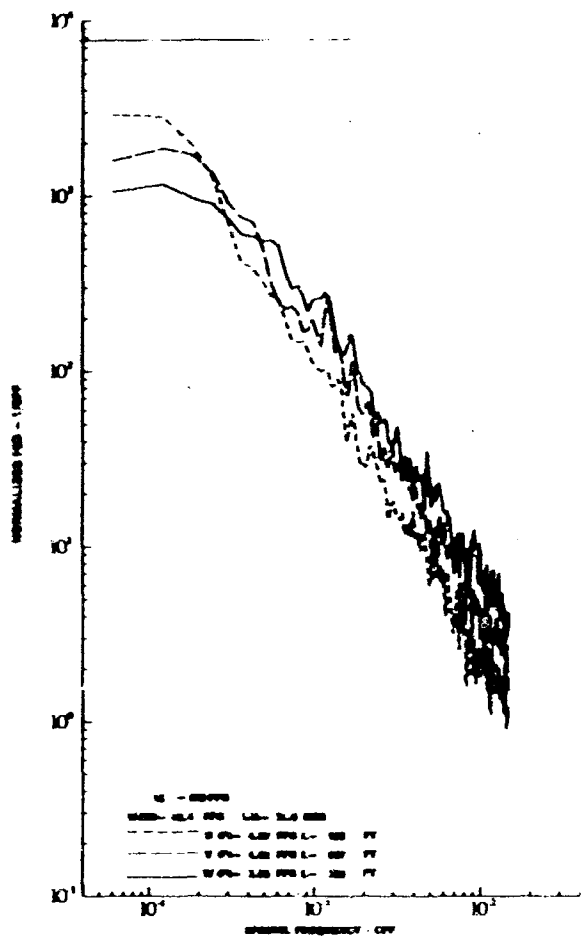
Turbulence Spectra Data For Test 187, Log 7, Category 123243



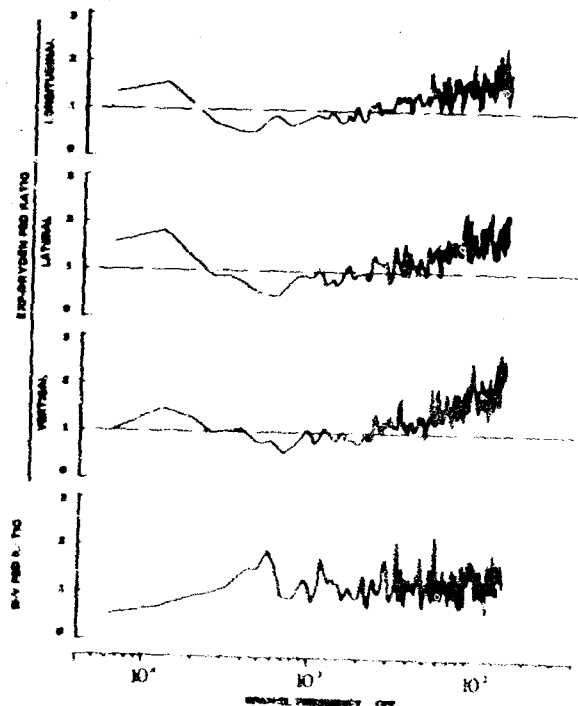
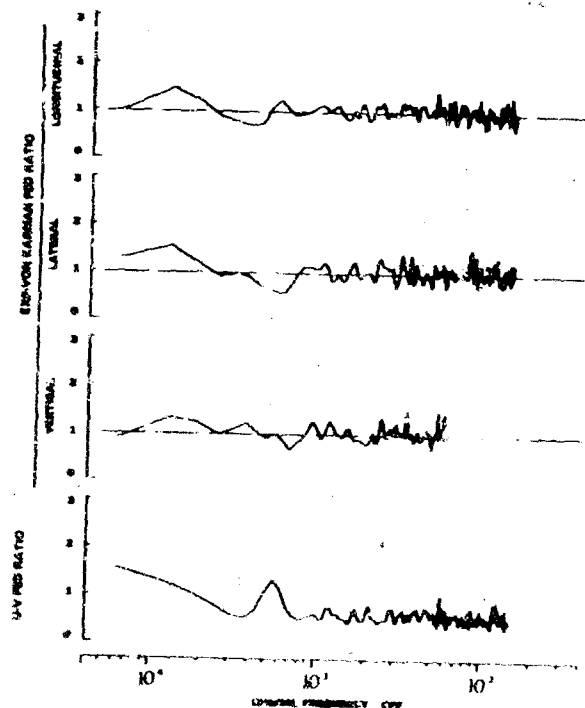
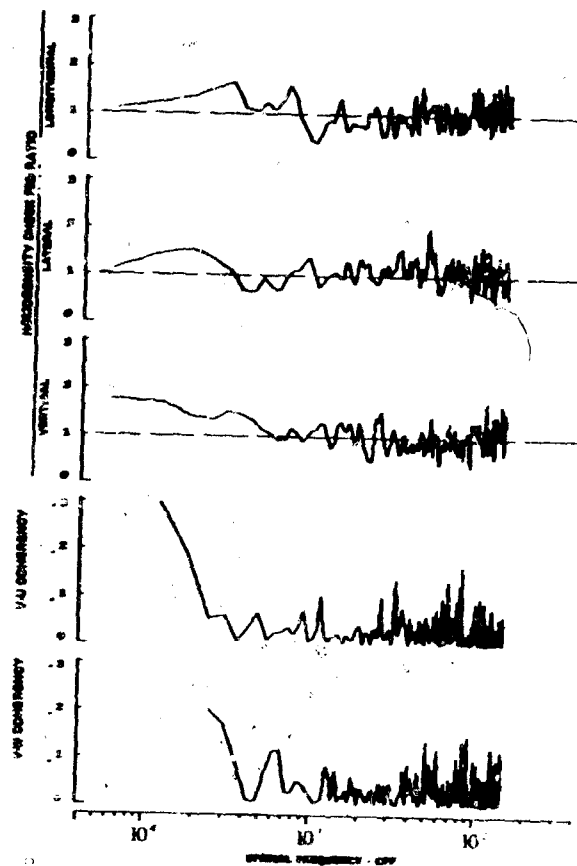
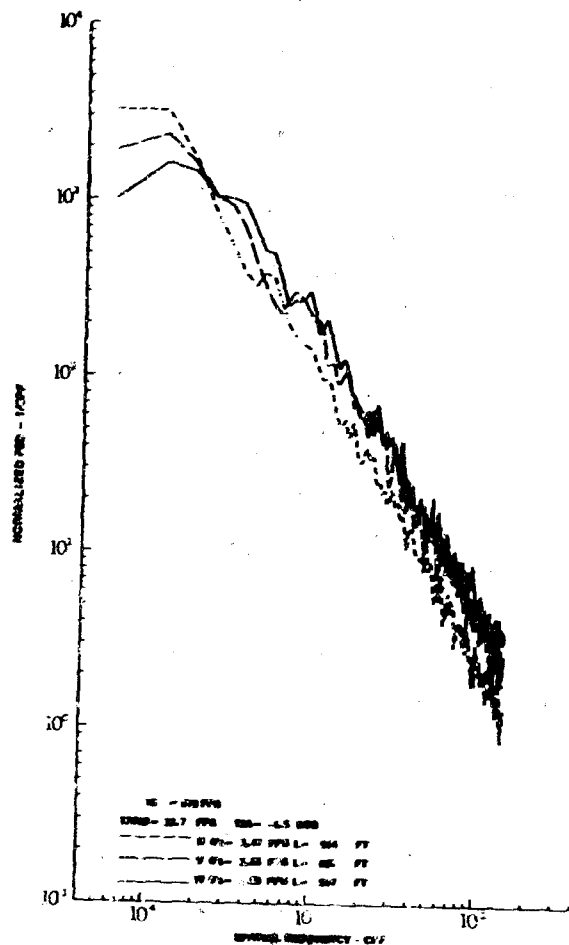




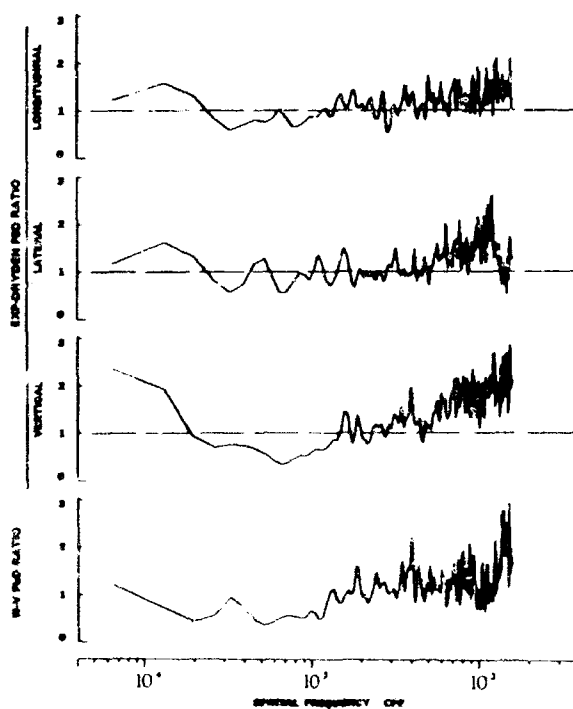
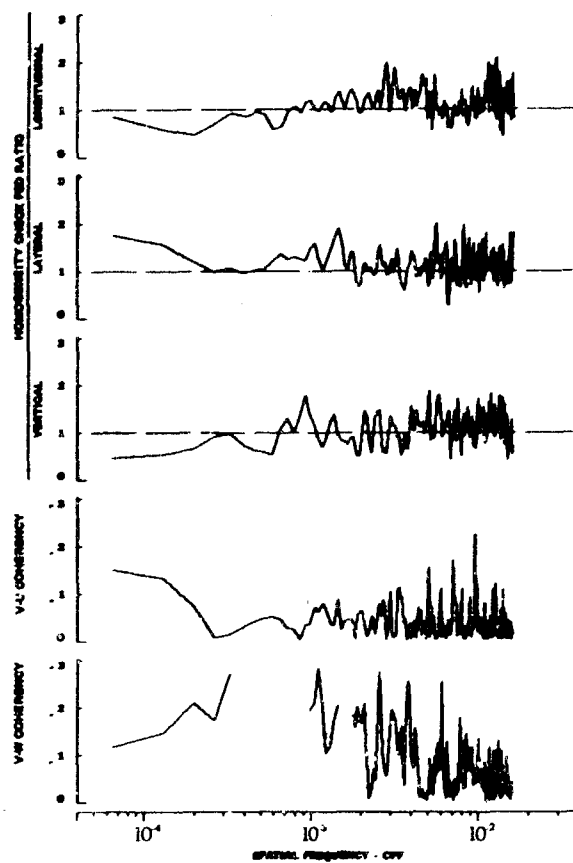


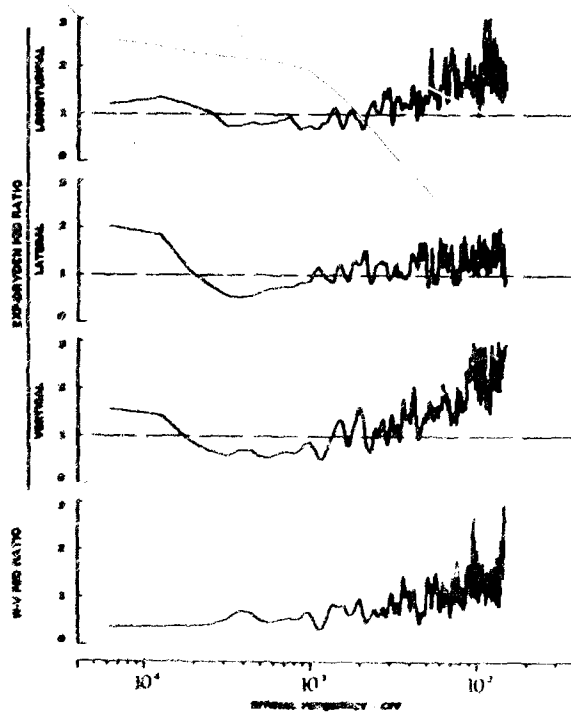
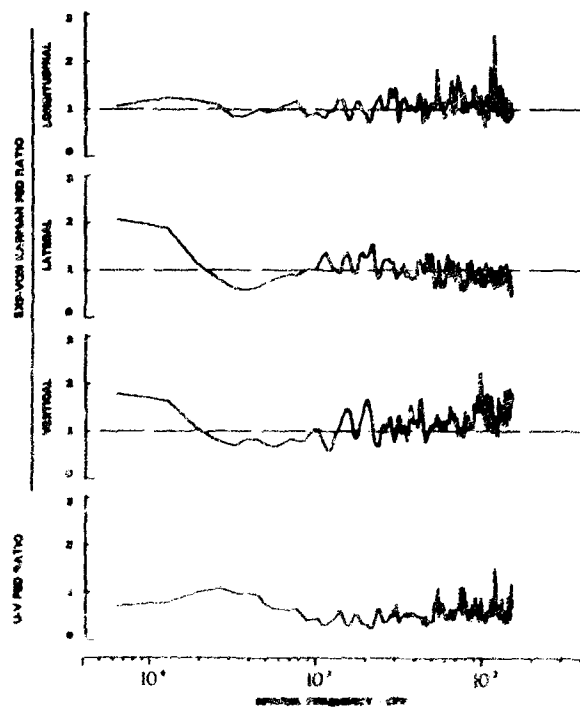
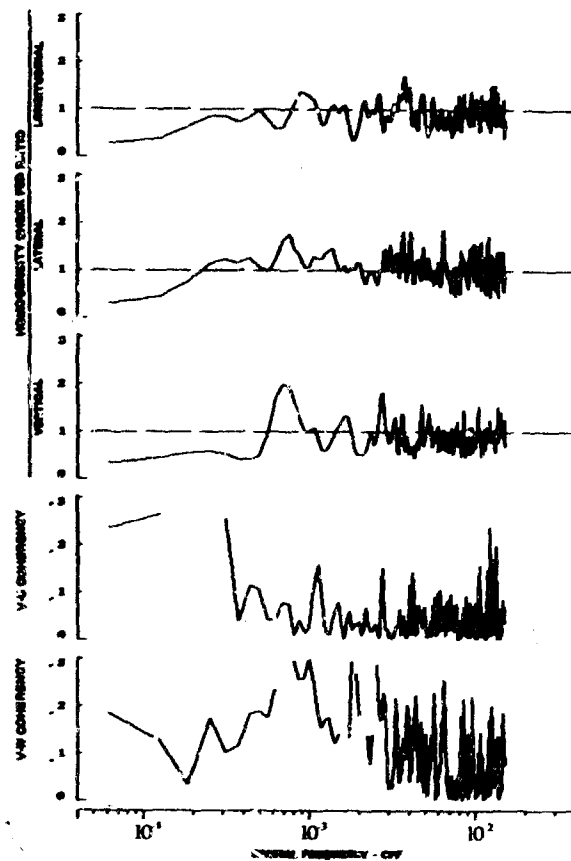
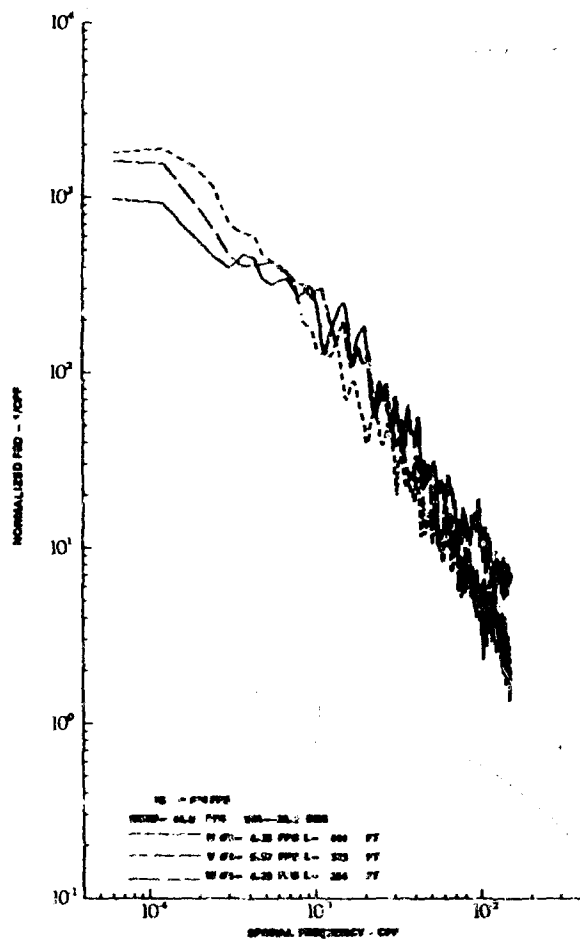


Turbulence Spectra Data For Test 188, Leg 6, Category 122343

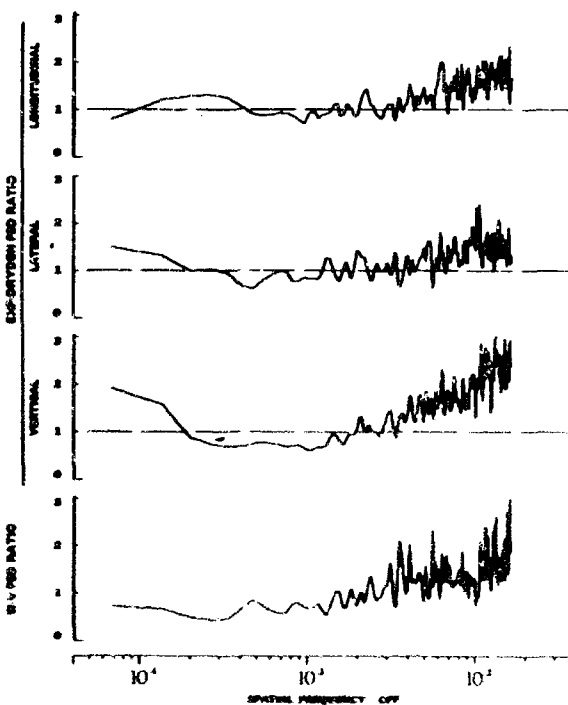
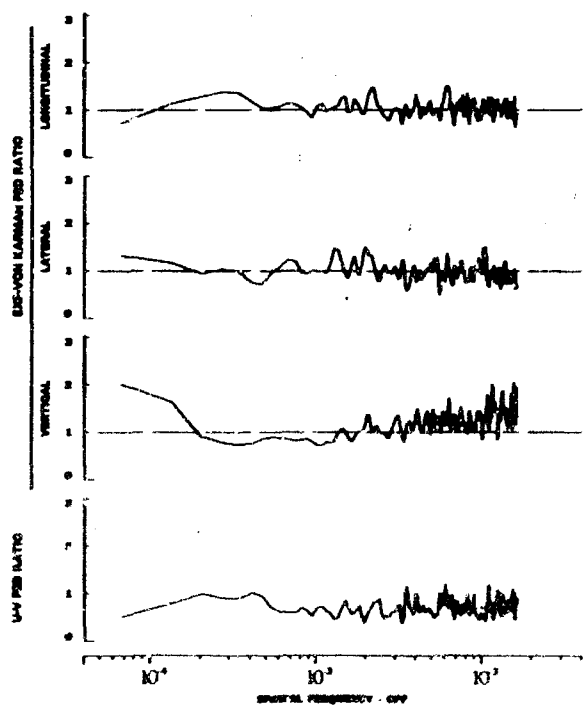
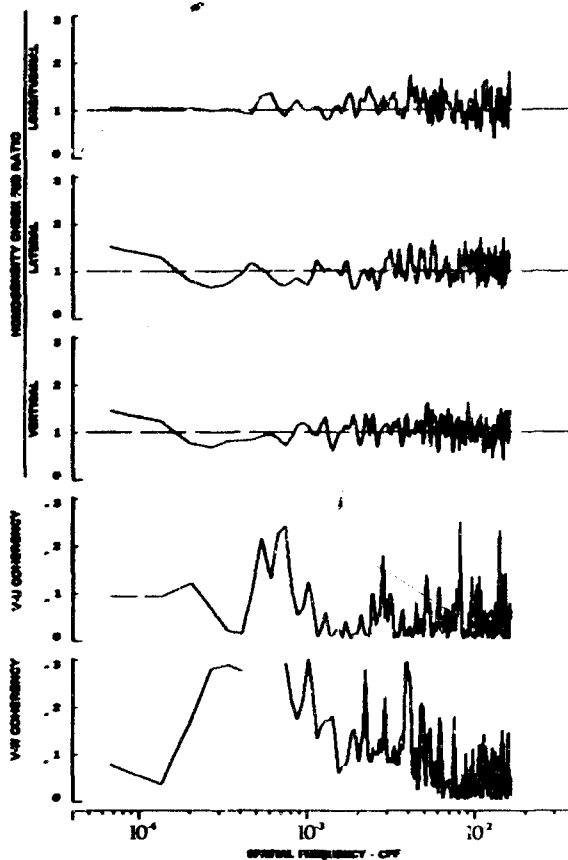
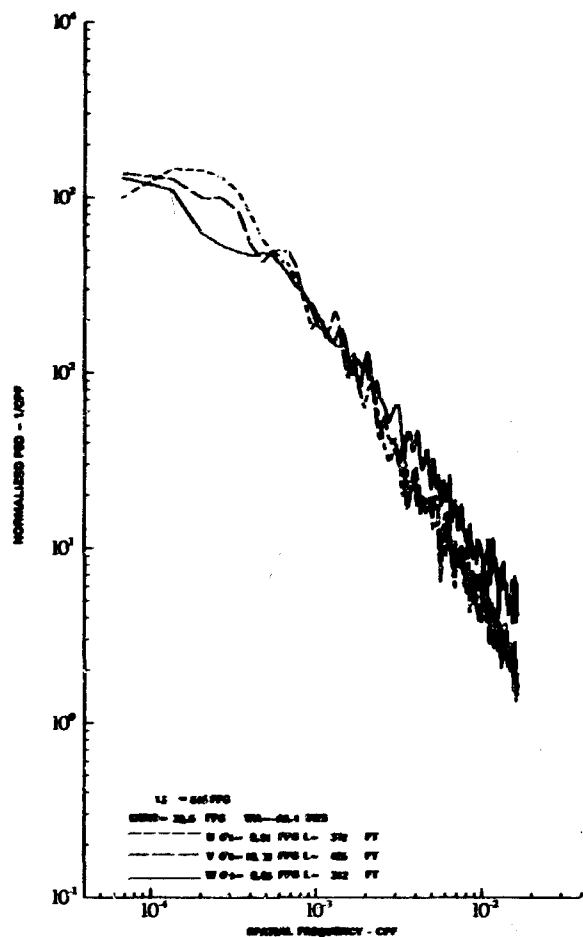


Turbulence Spectra Data For Test 188, Log 8, Category 423343





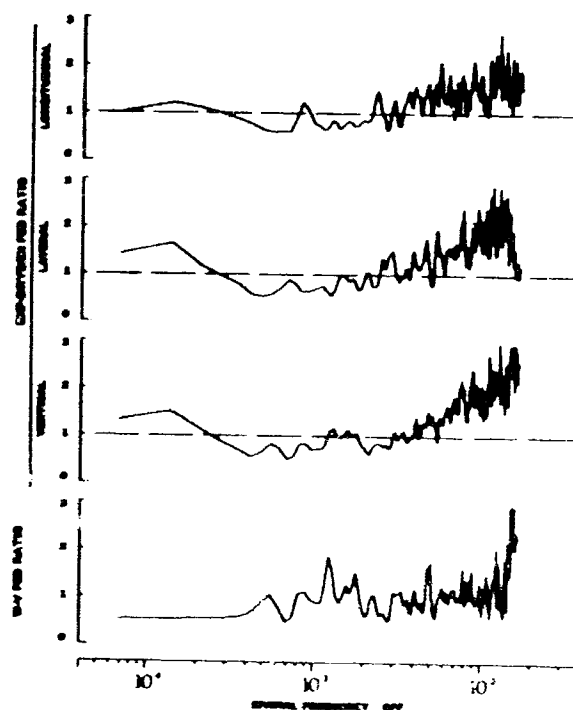
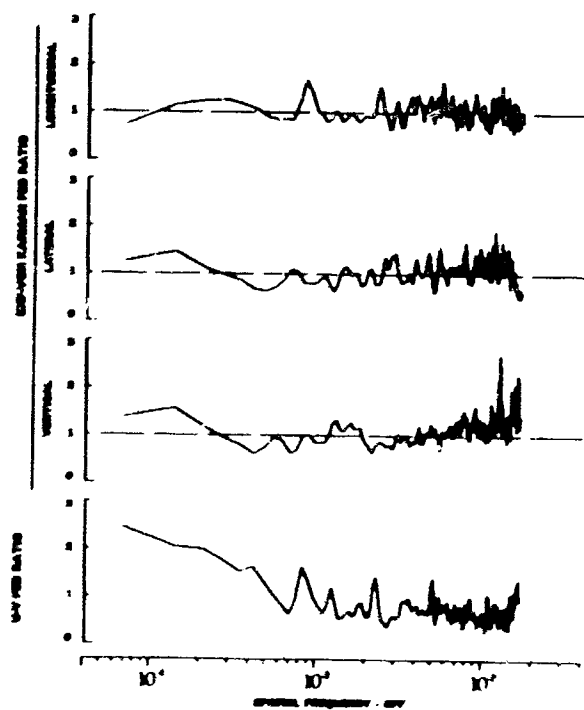
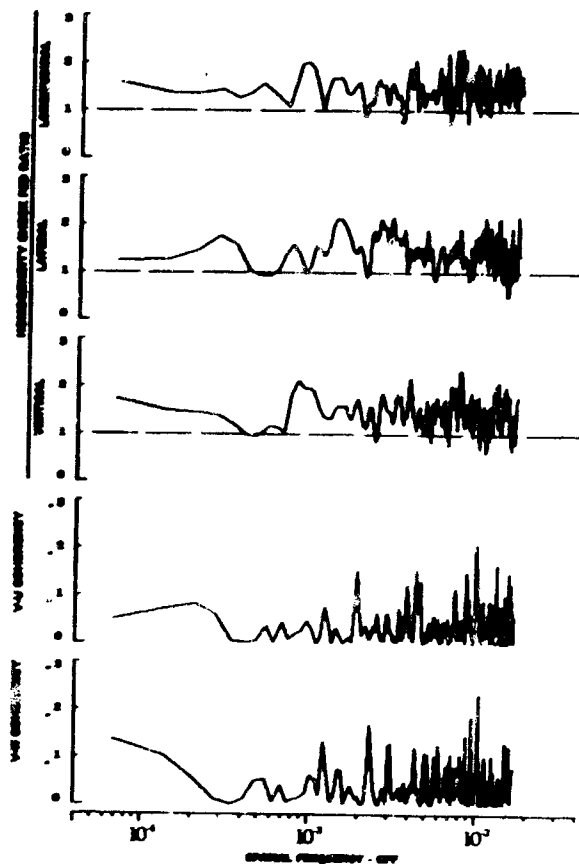
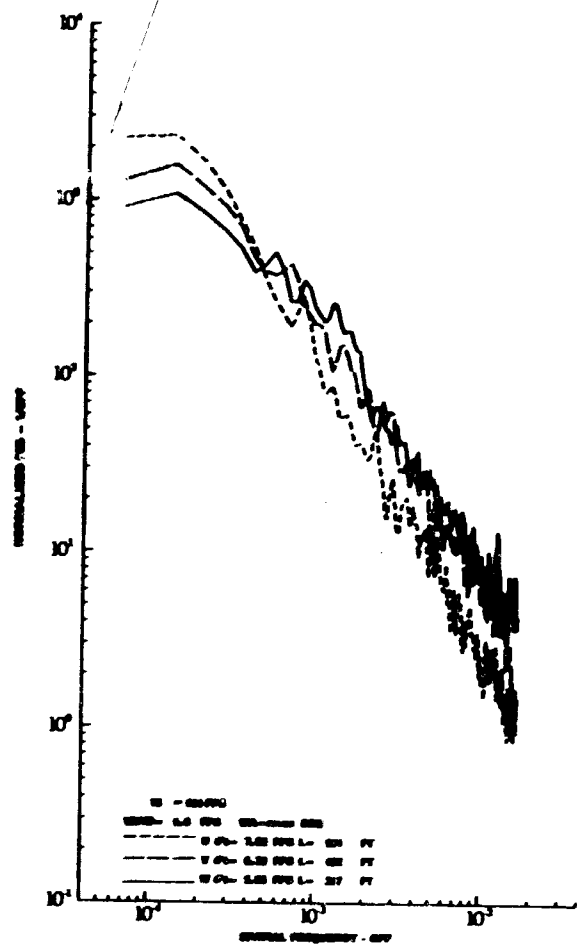
Turbulence Spectra Data For Test 189, Log 3, Category 113243



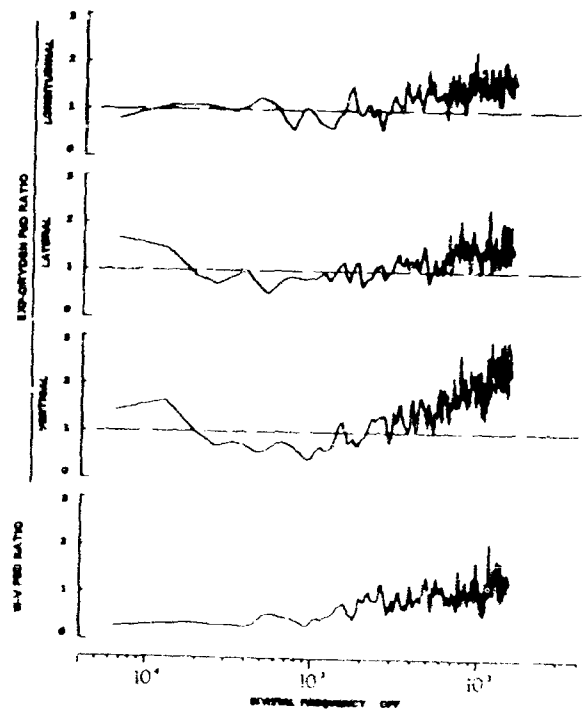
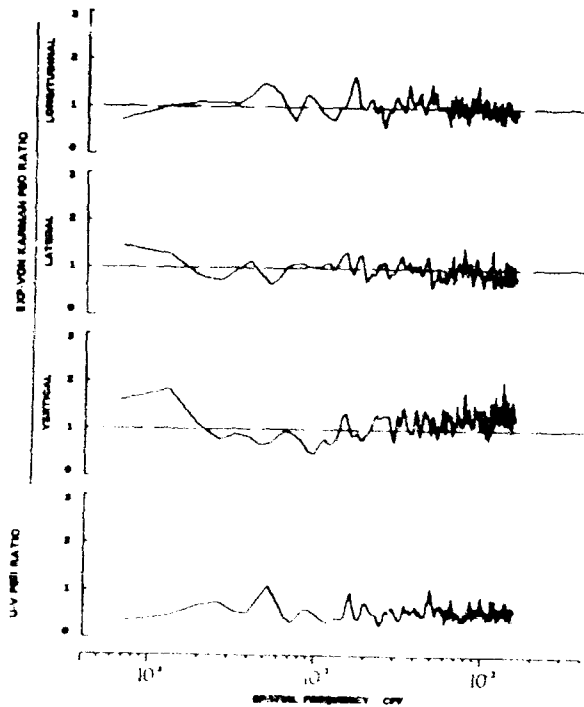
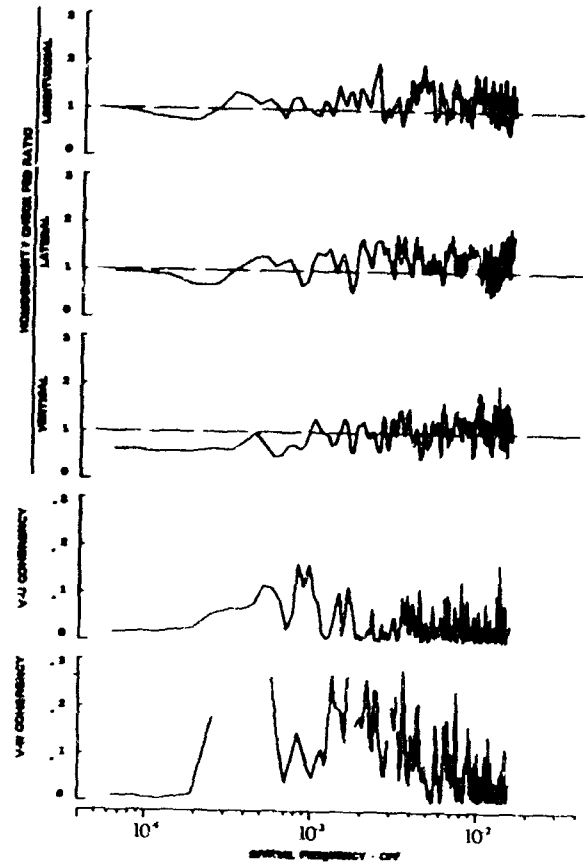
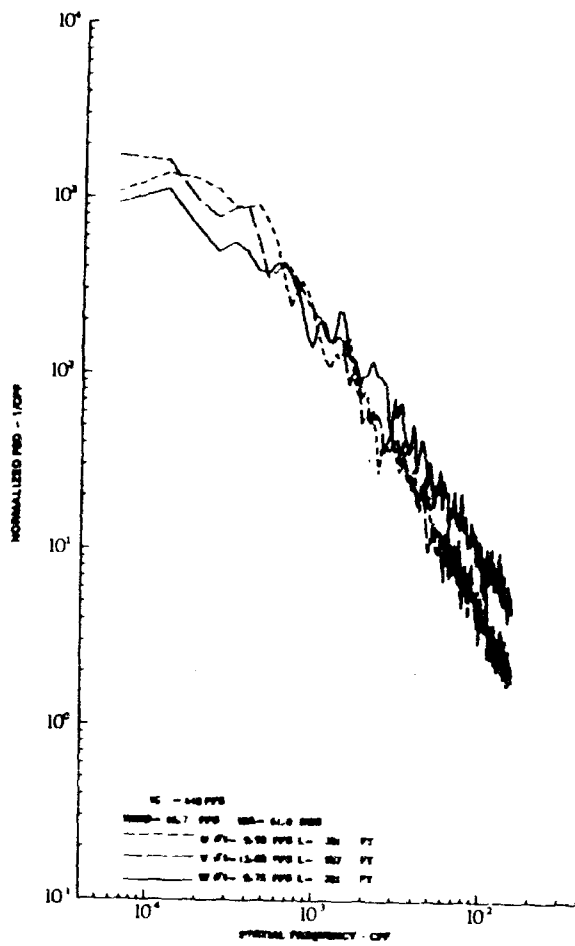
Turbulence Spectra Data For Test 189, Leg 5, Category 113243



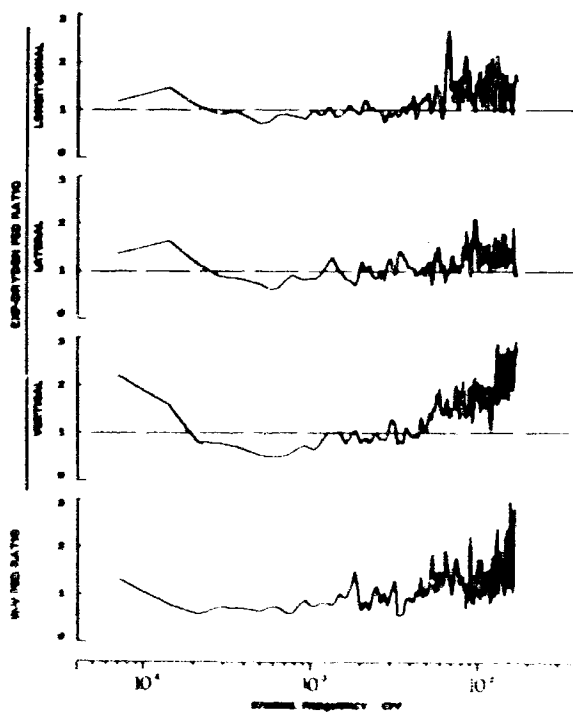
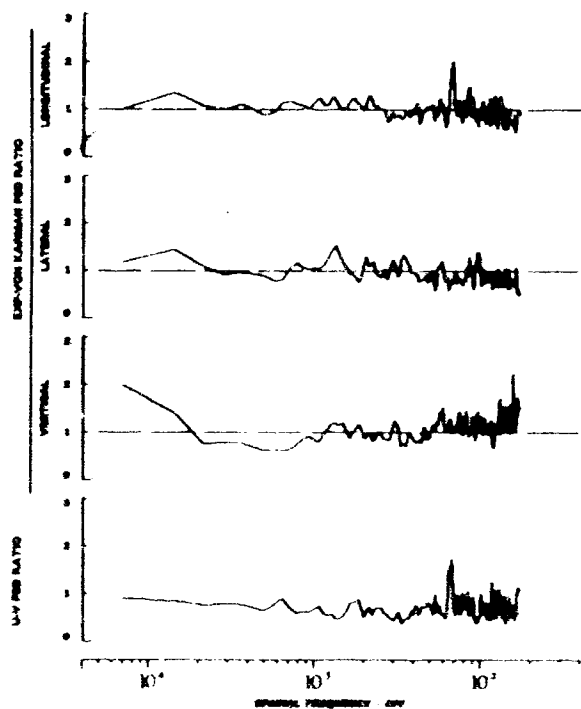
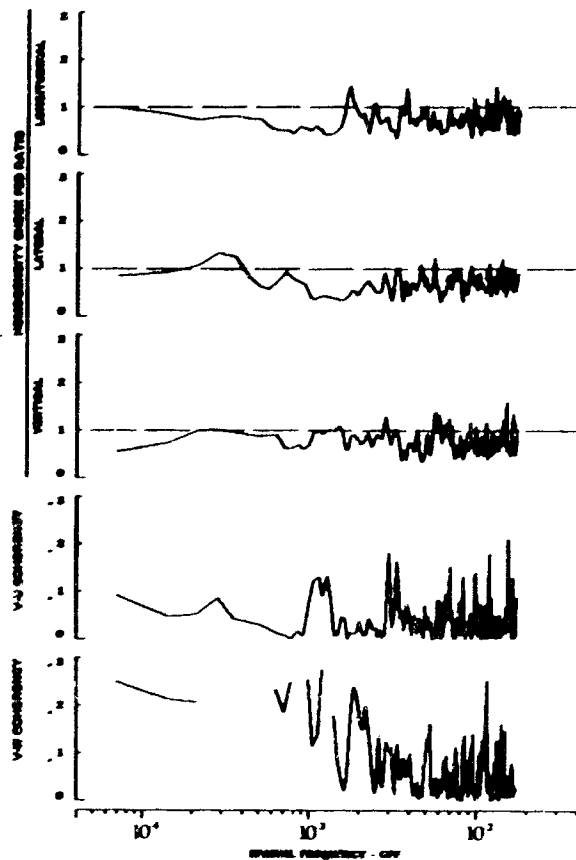
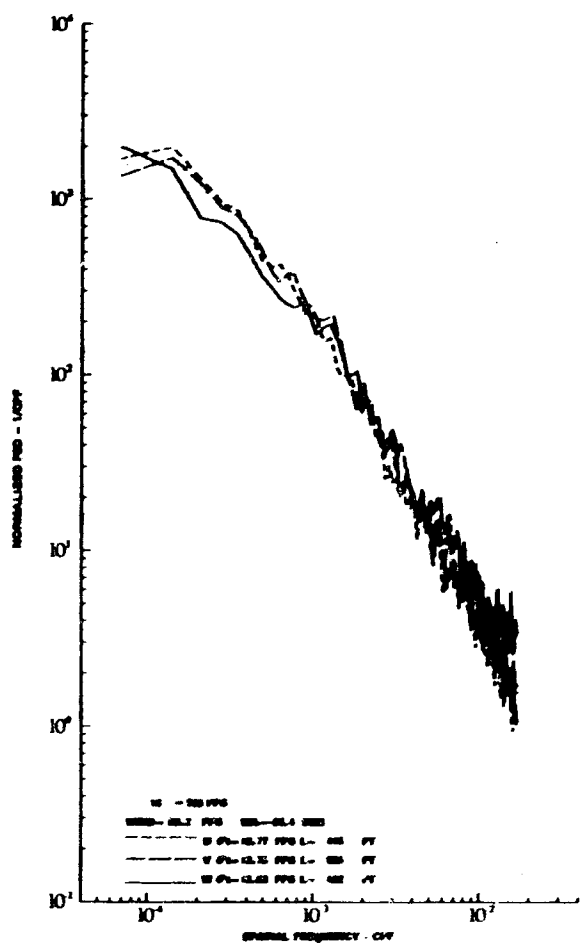




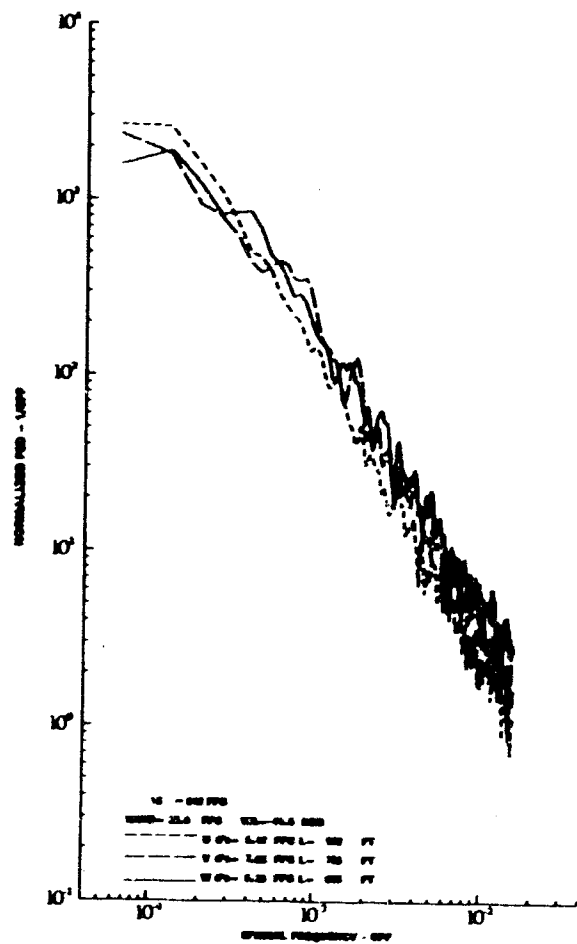
Turbulence Spectra Data For Test 190, Log 2, Category 114343

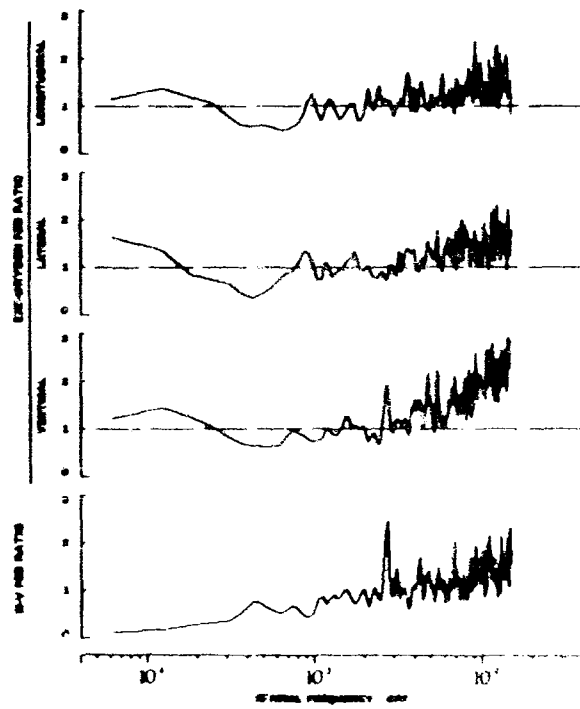
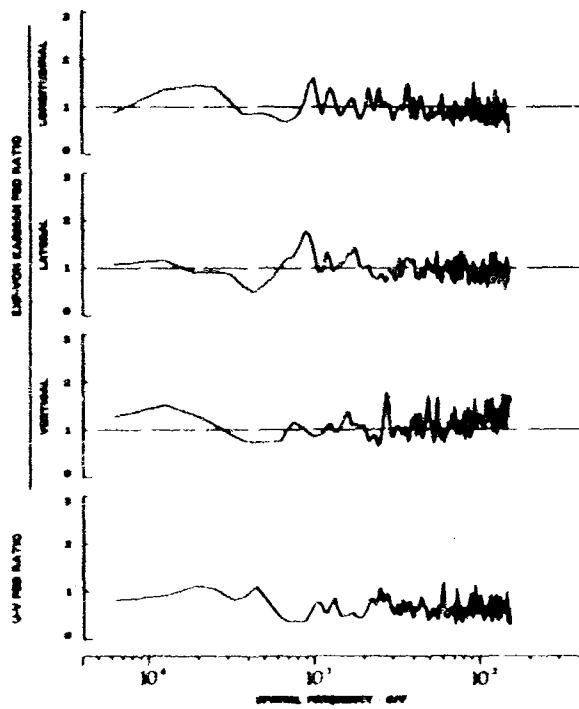
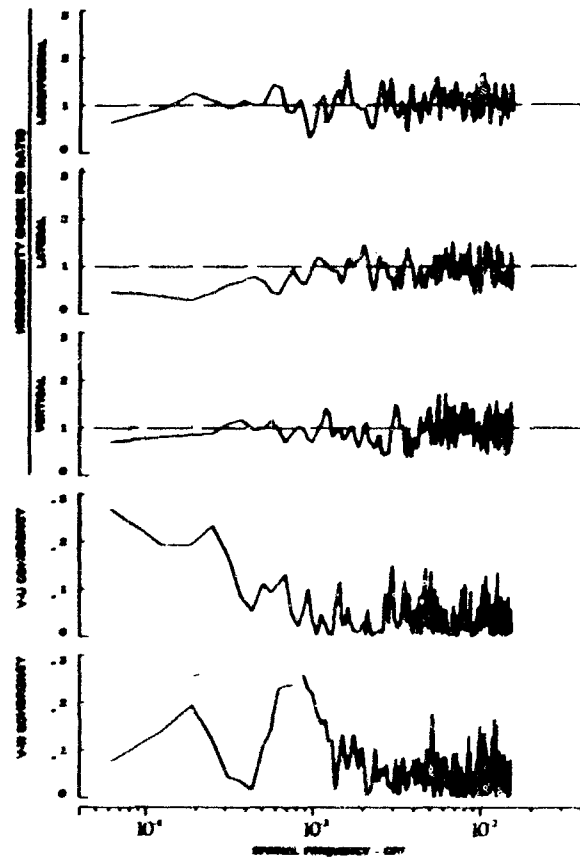
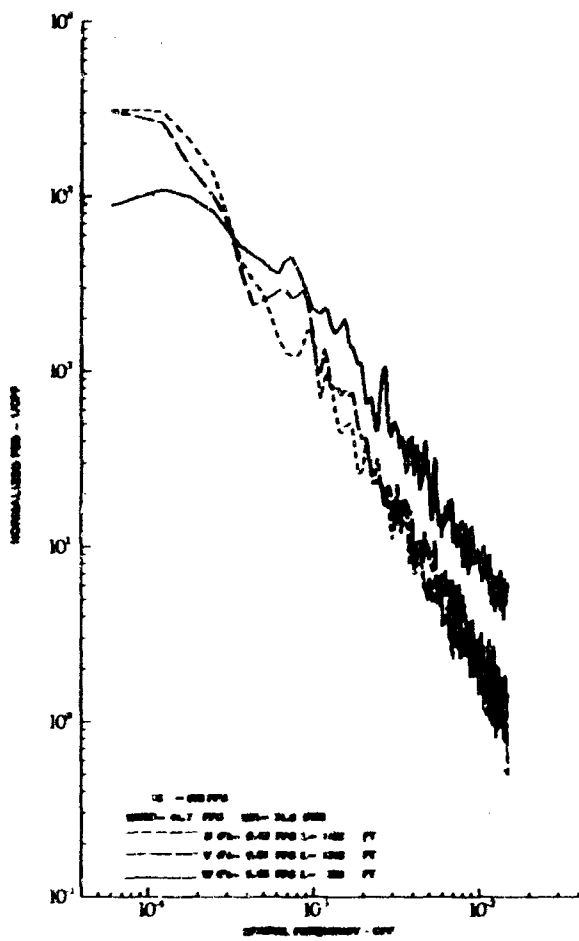


Turbulence Spectra Data For Test 190, Leg 6, Category 112343

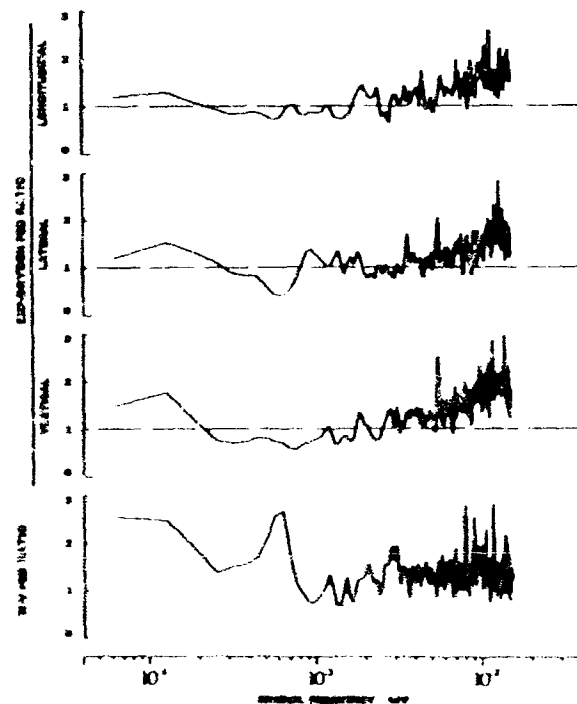
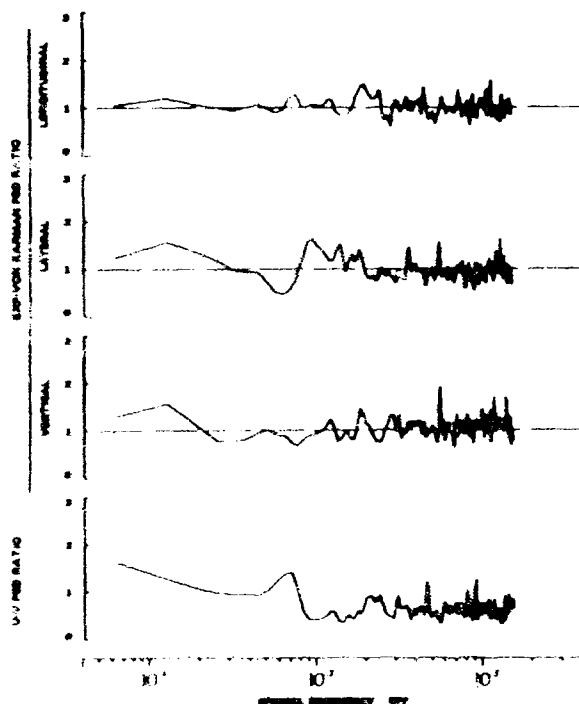
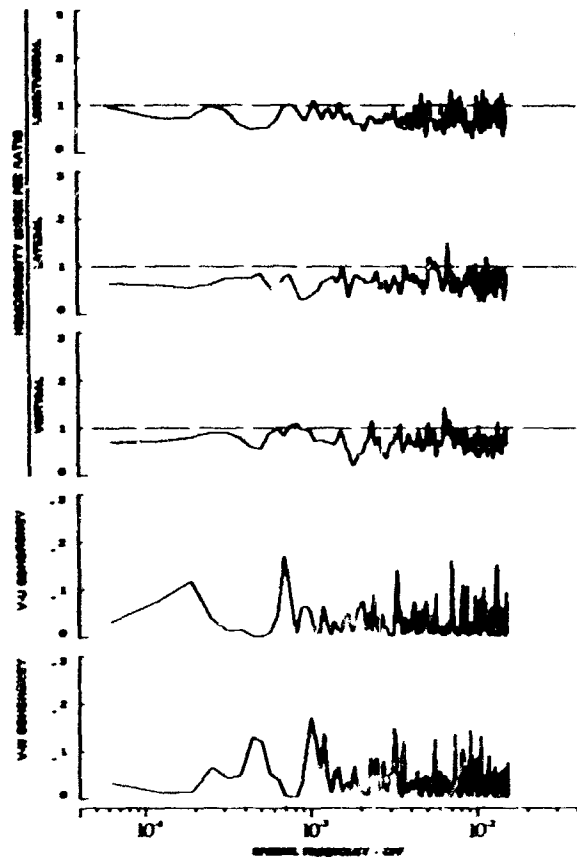
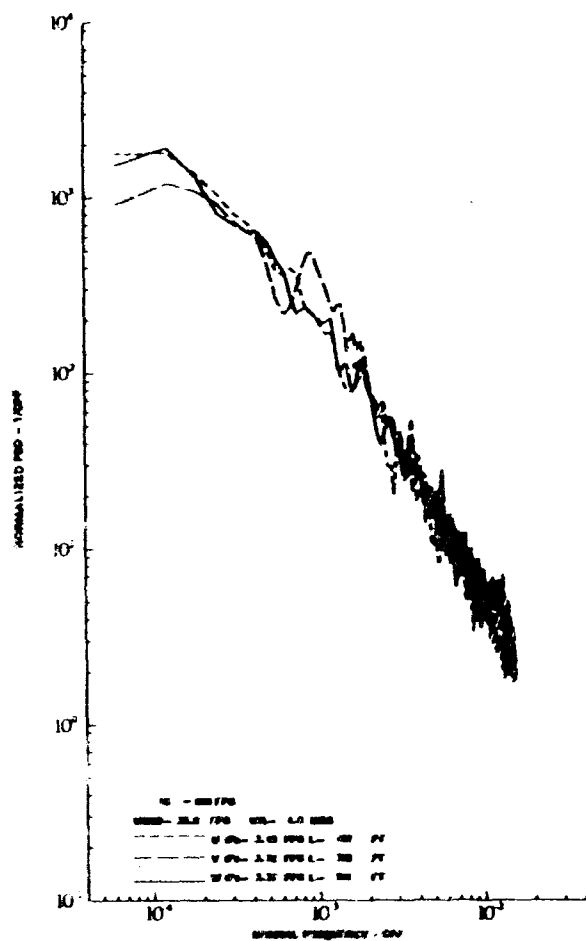


Turbulence Spectra Data For Test 191, Log 5, Category 122143





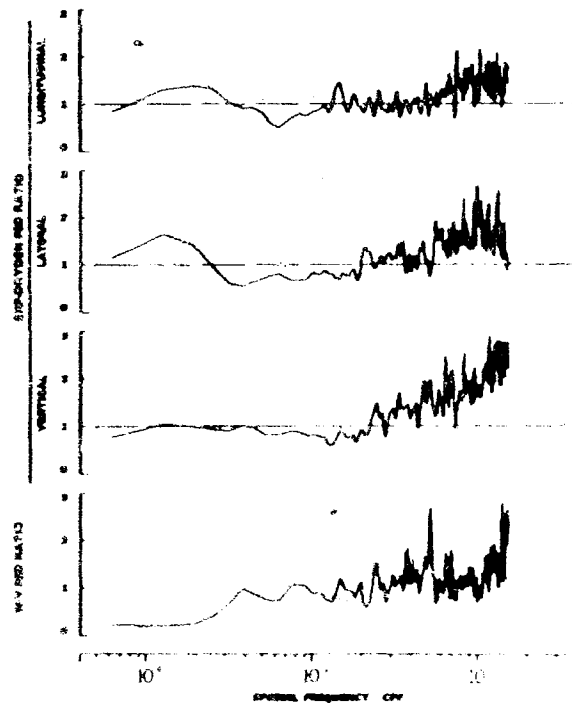
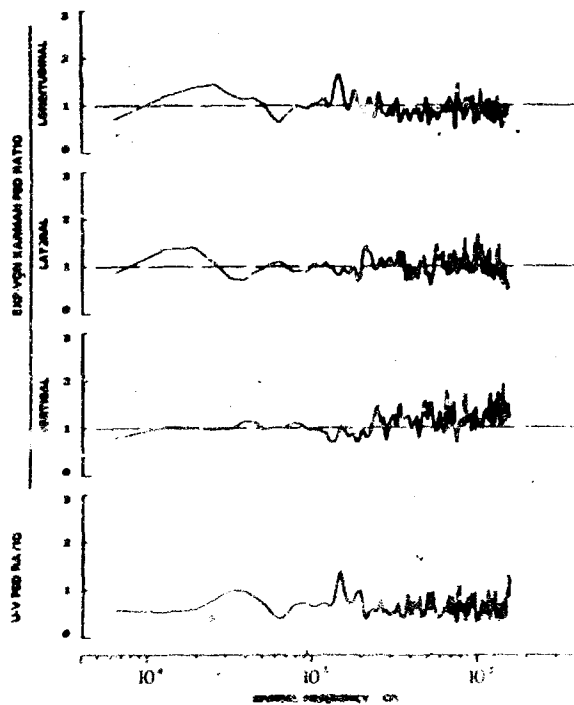
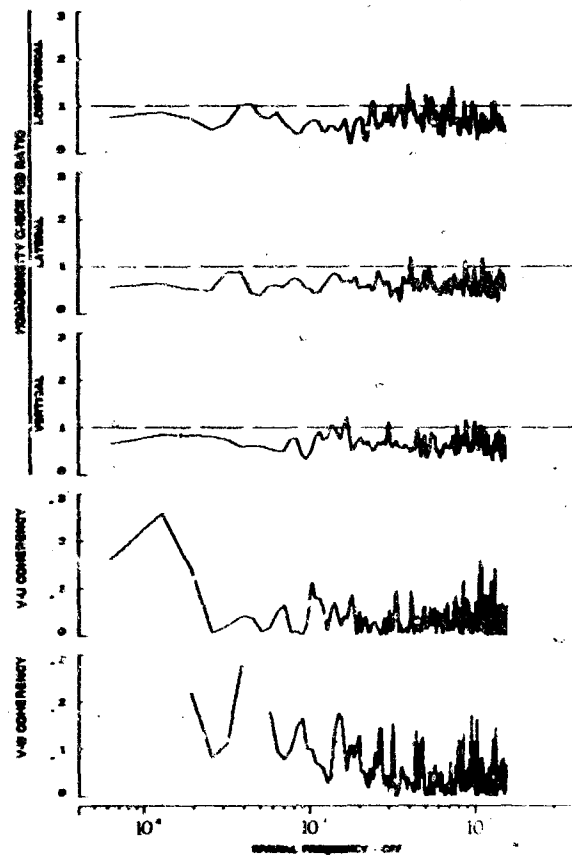
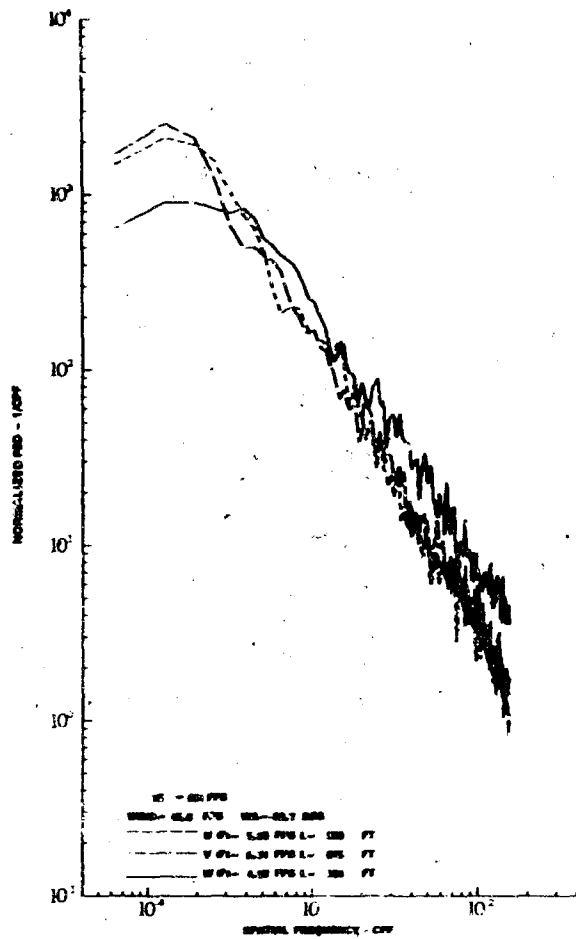
Turbulence Spectra Data For Test 192, Leg 6, Category 122743



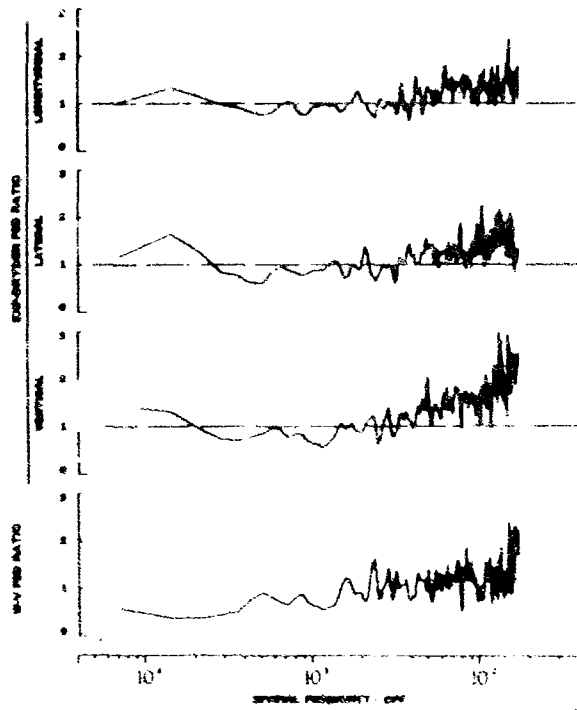
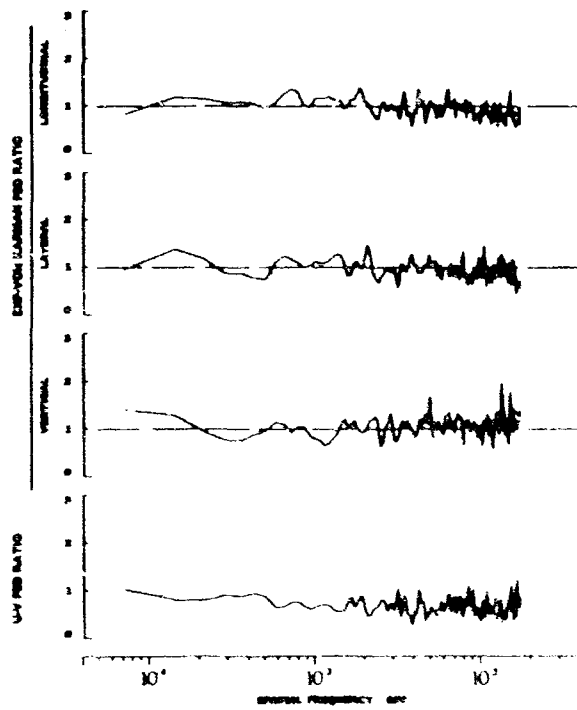
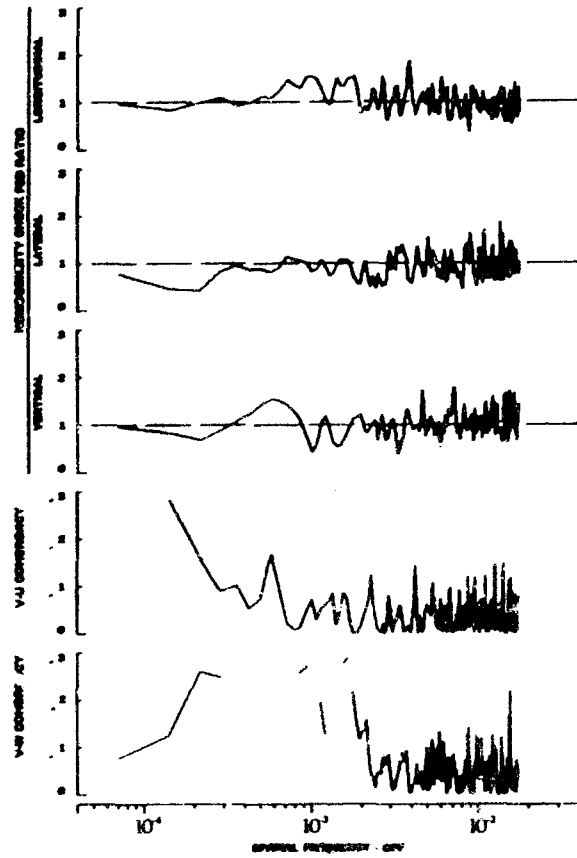
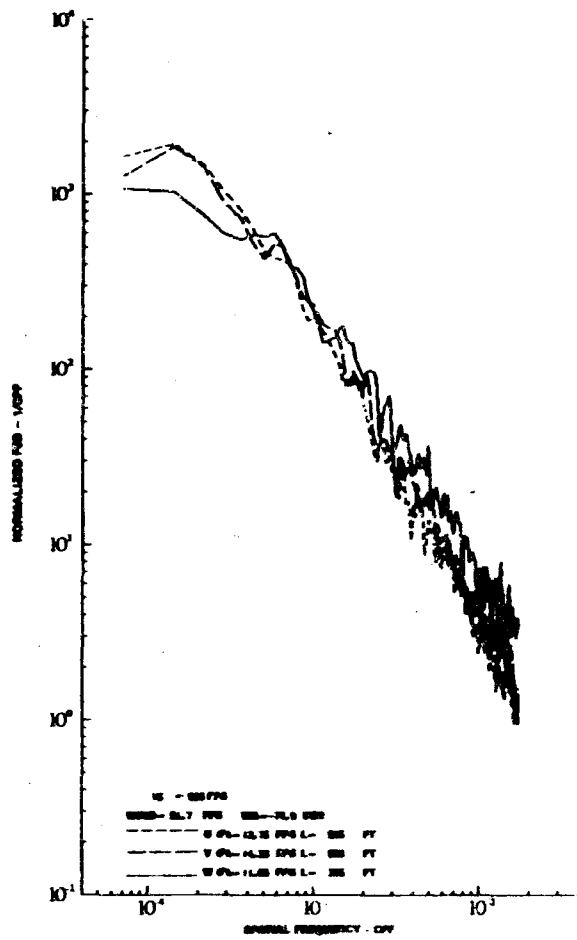
Turbulence Spectra Data For Test 192, Leg 8, Category 423243



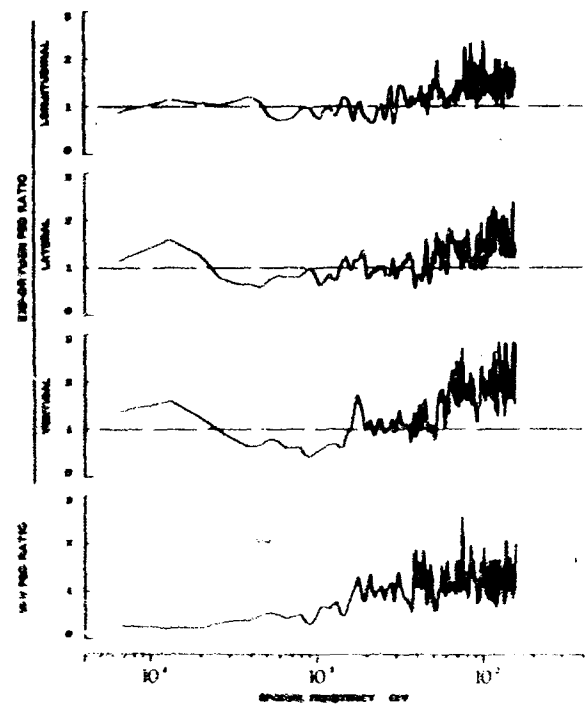
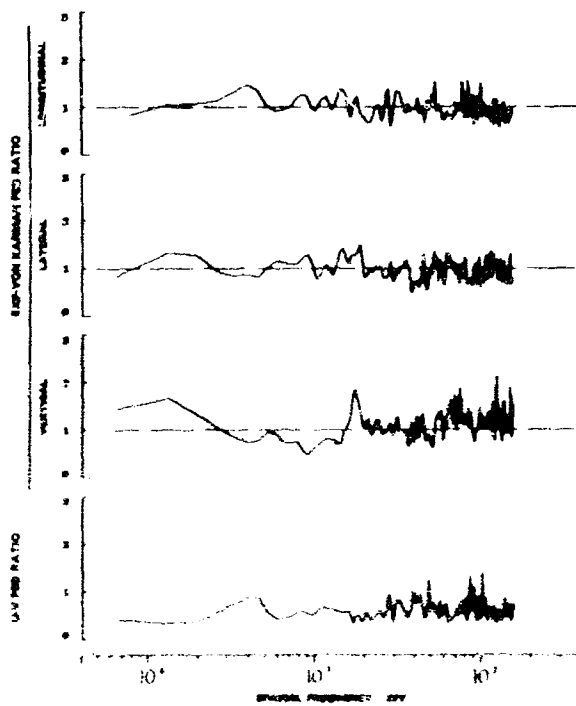
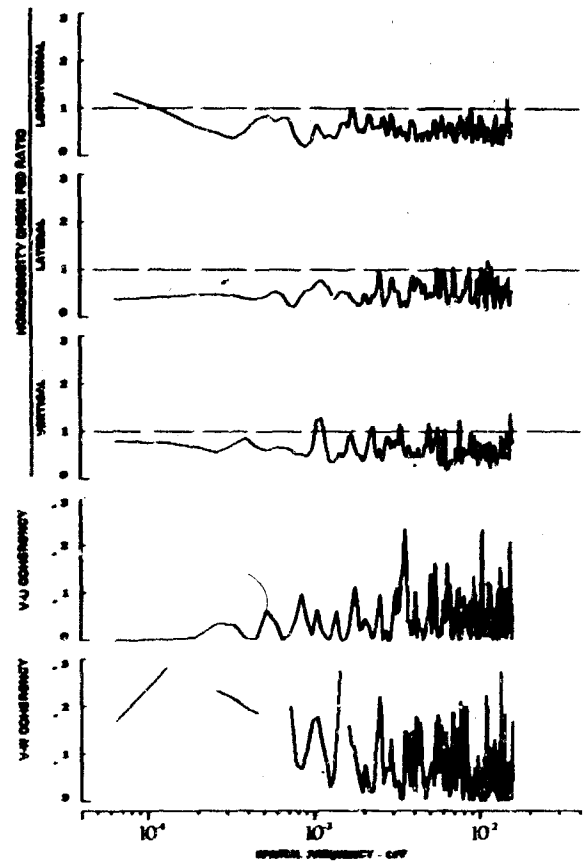
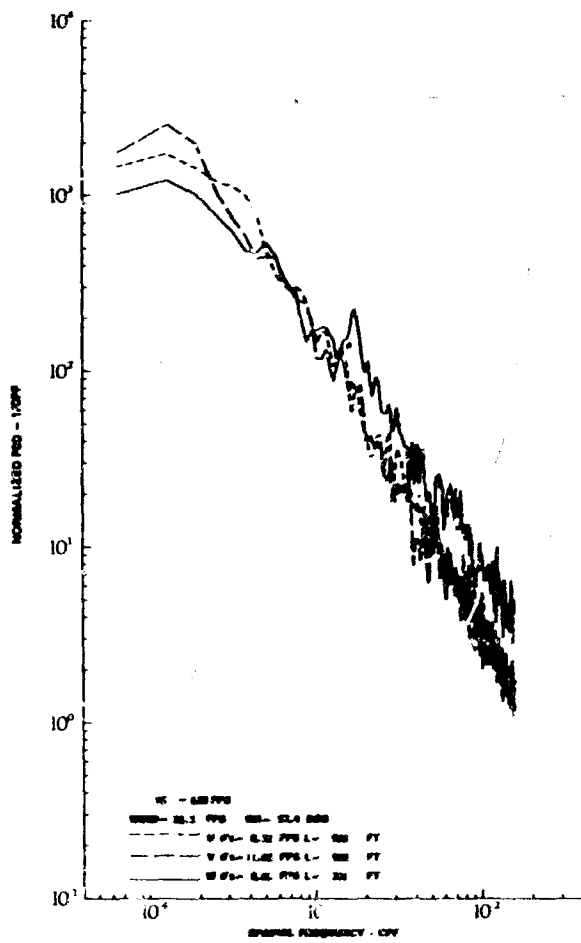




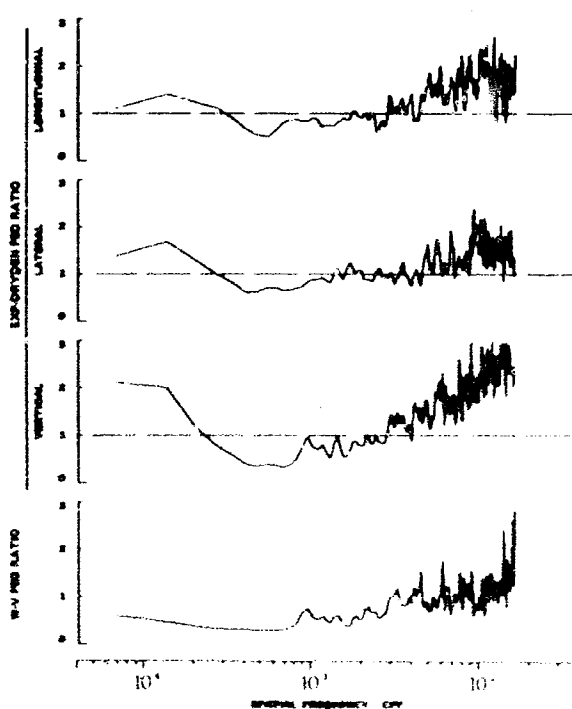
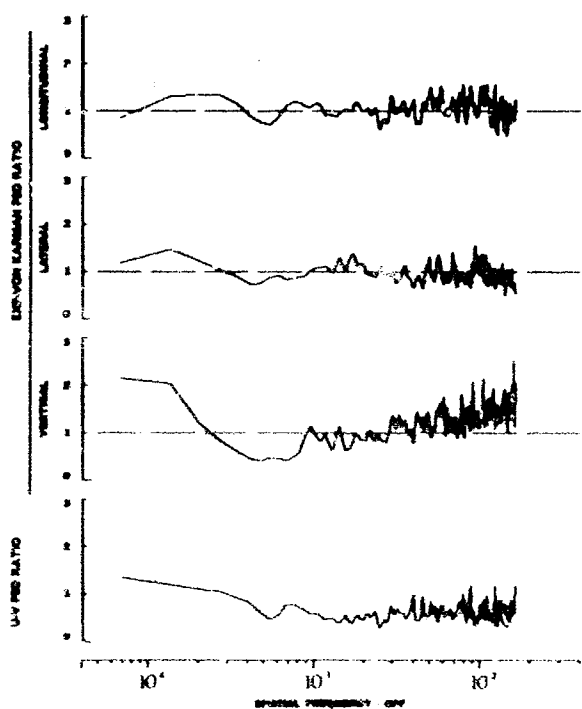
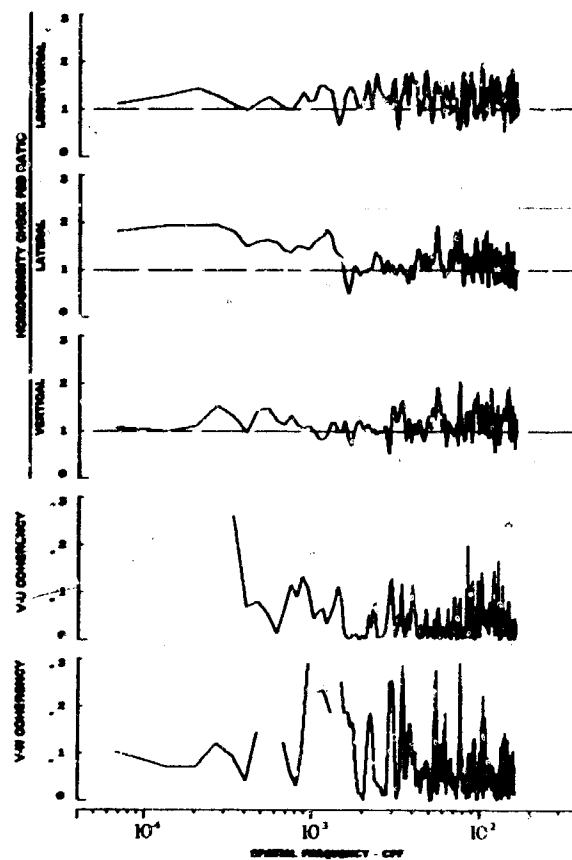
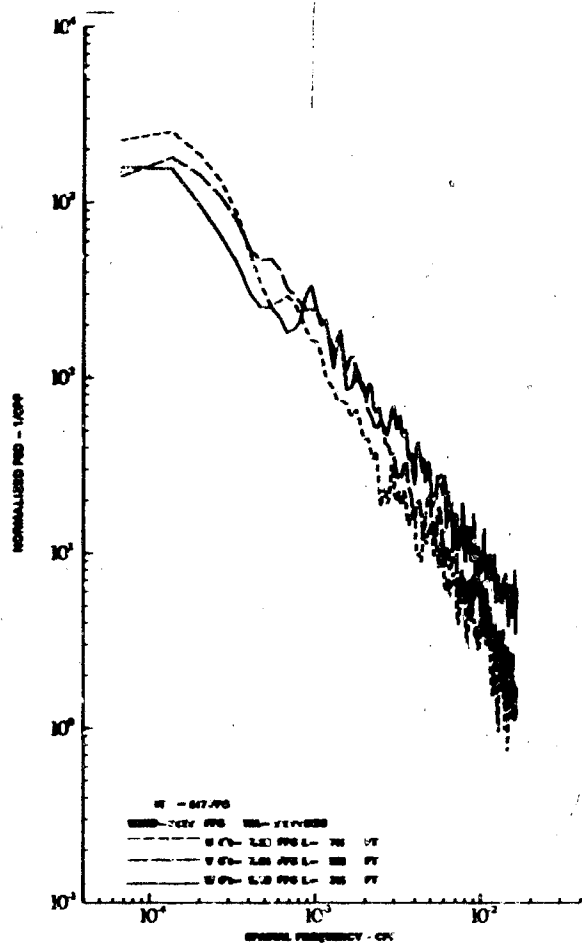
Turbulence Spectra Data For Test 193, Leg 3, Category 124343



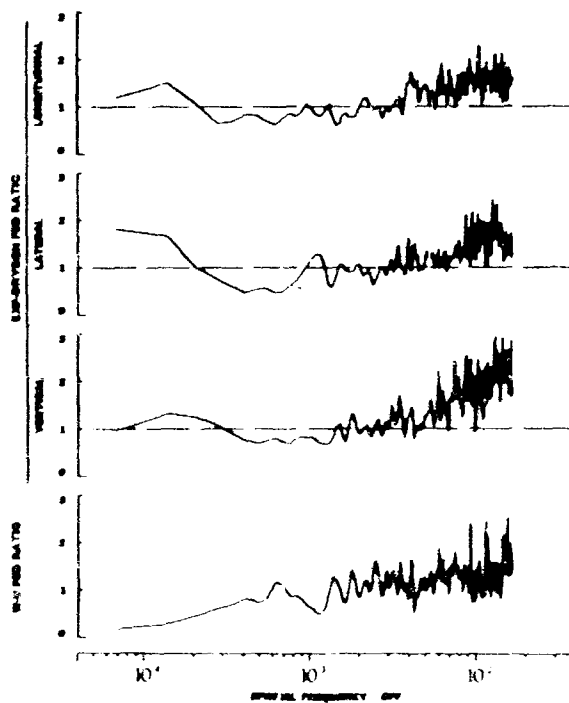
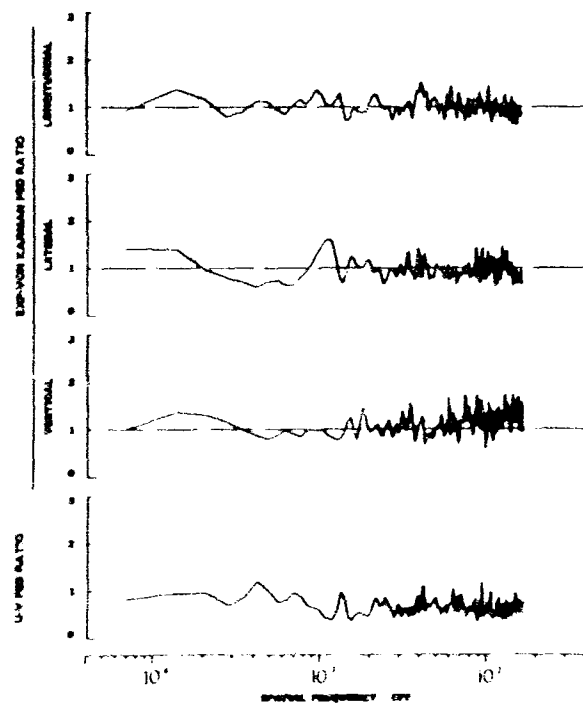
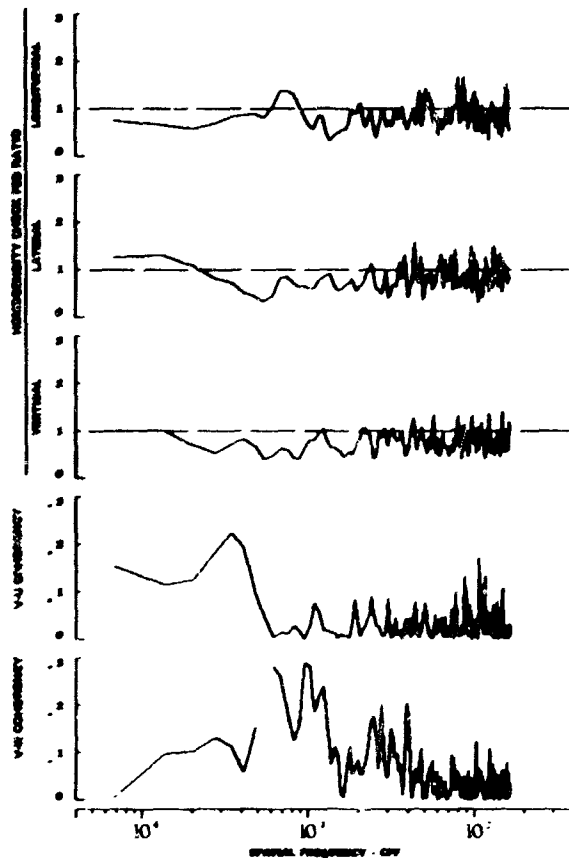
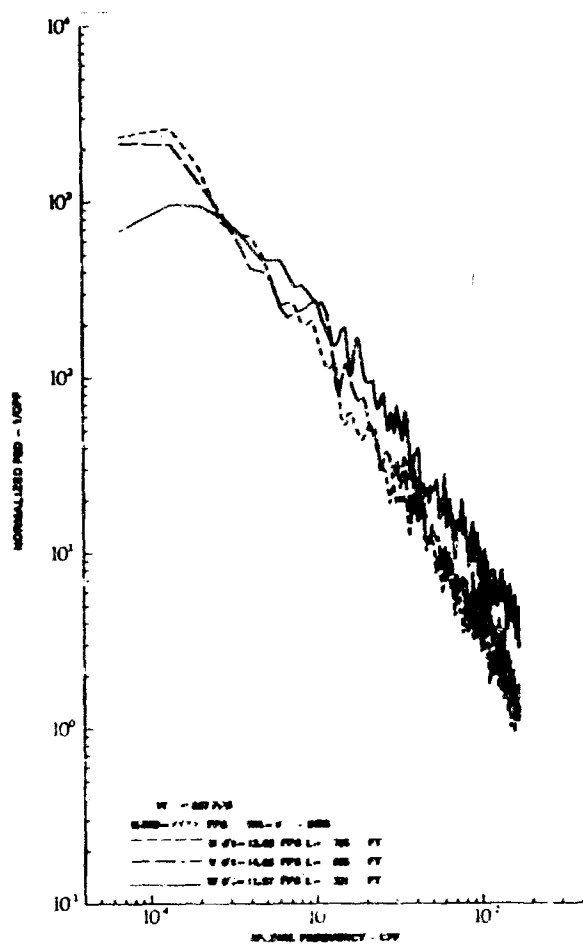
Turbulence Spectra Data For Test 193, Leg 5, Category 124343



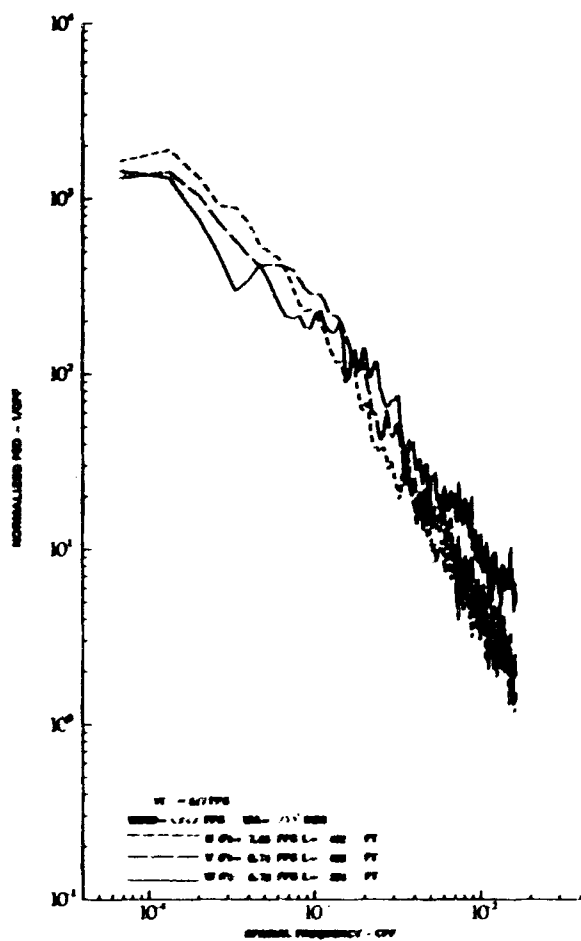
Turbulence Spectra Data For Test 193, Log 7, Category 124343

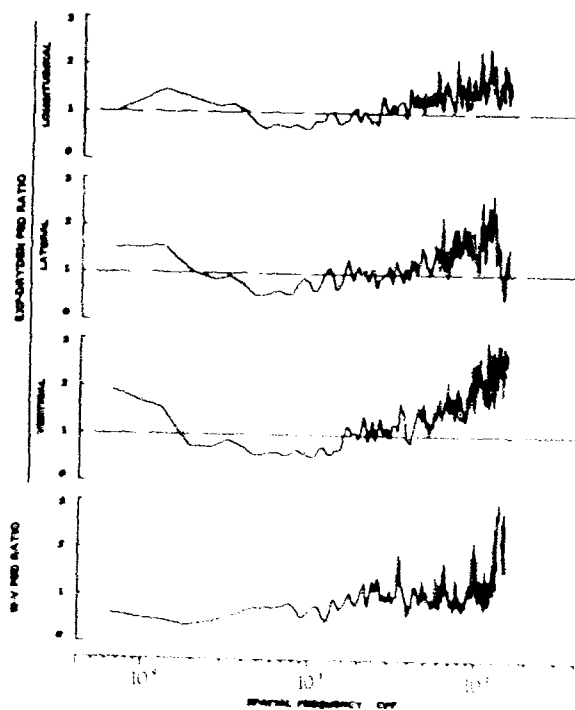
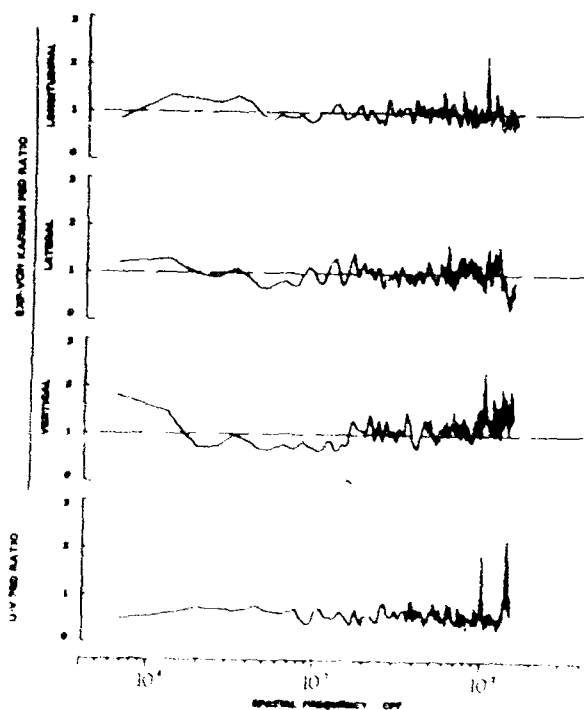
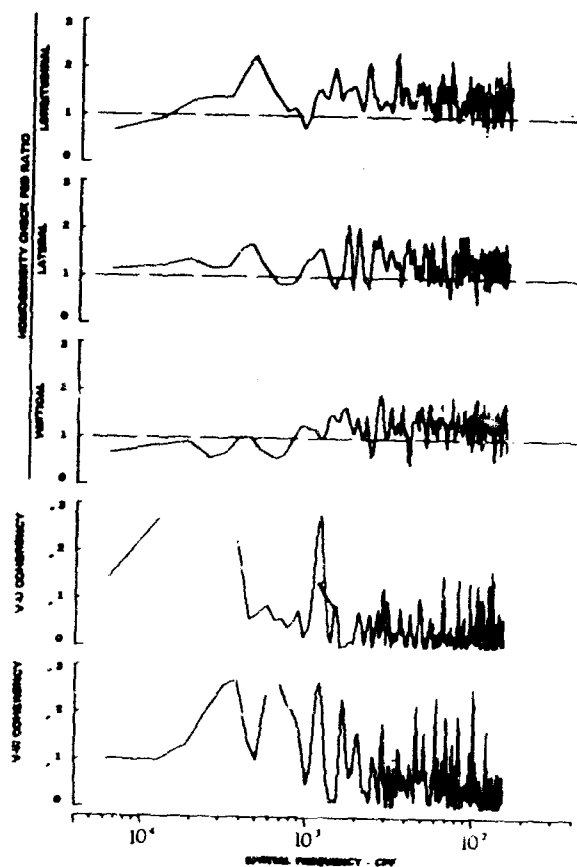
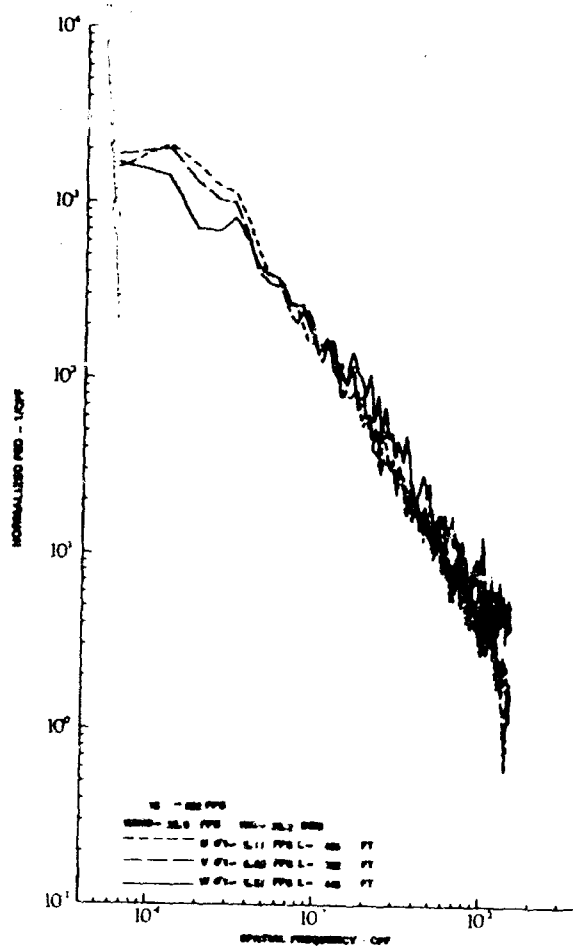


Turbulence Spectra Data For Test 194, Leg 4, Category 113143

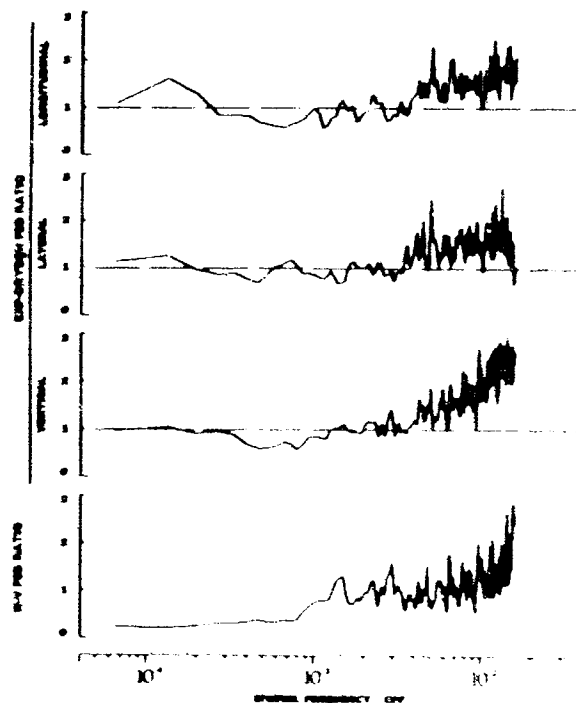
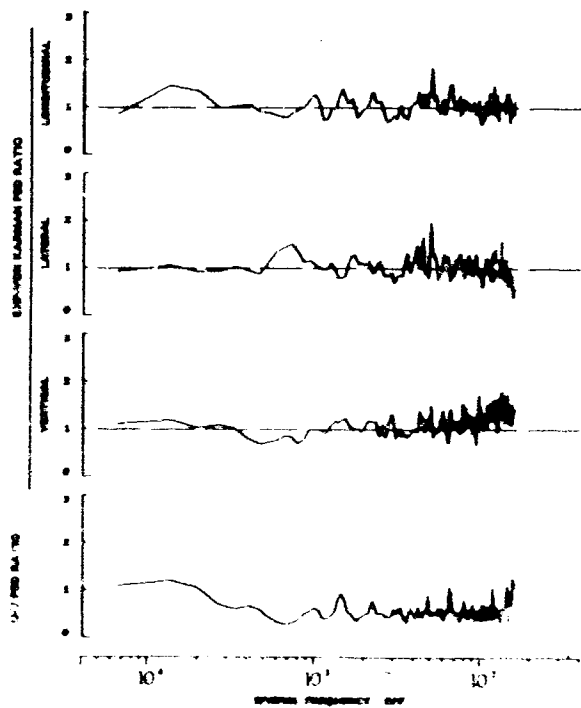
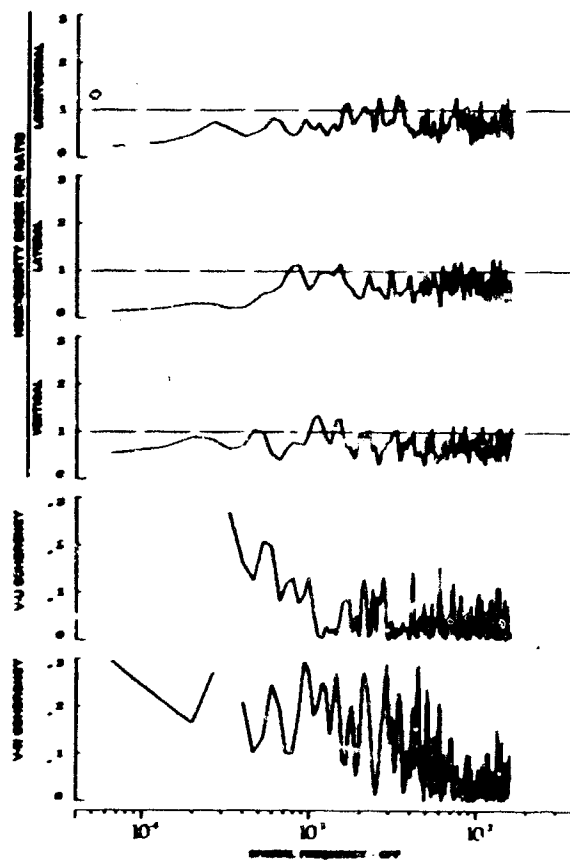
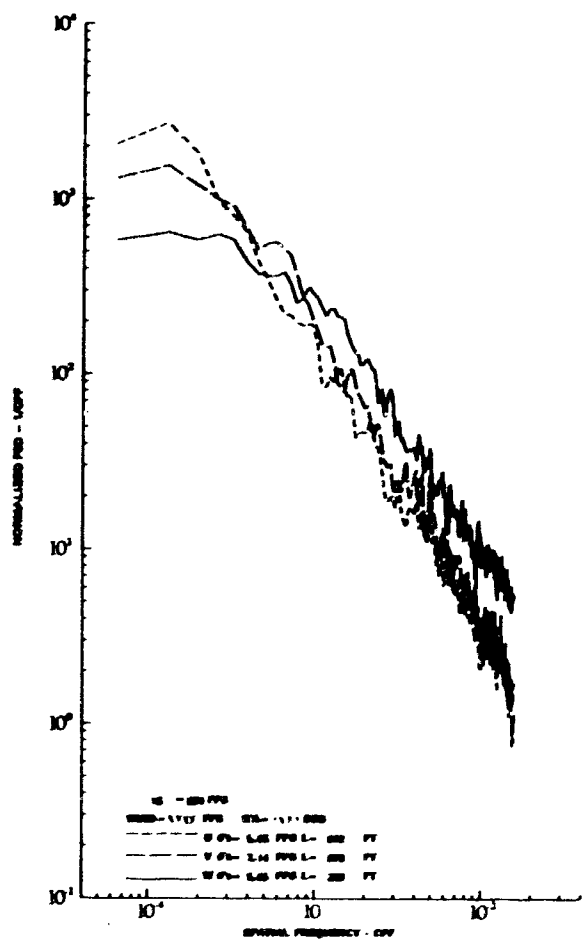


Turbulence Spectra Data For Test 194, Leg 5, Category 112143





Turbulence Spectra Data For Test 195, Log 1, Category 114243



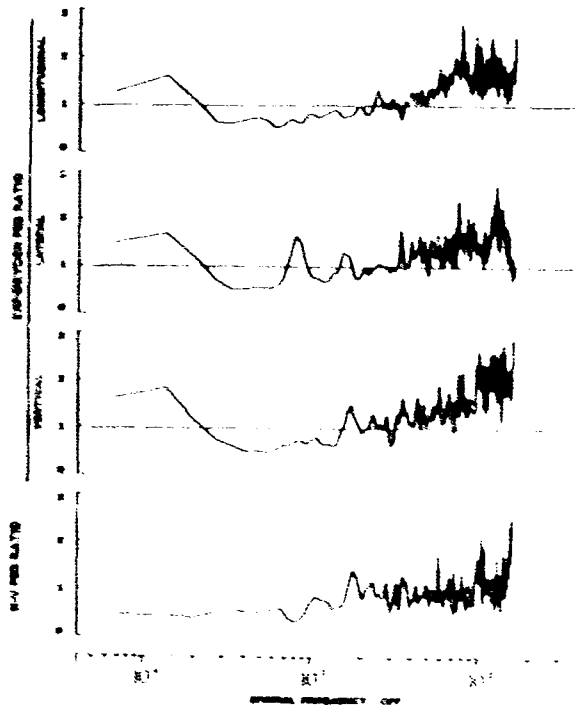
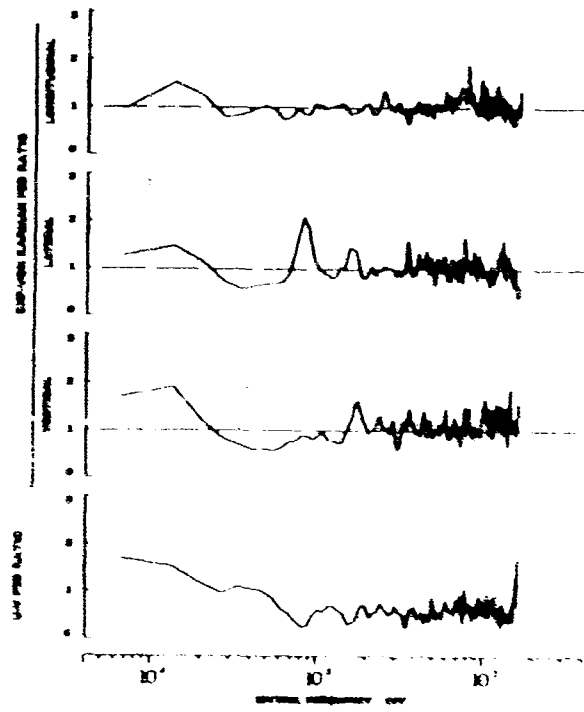
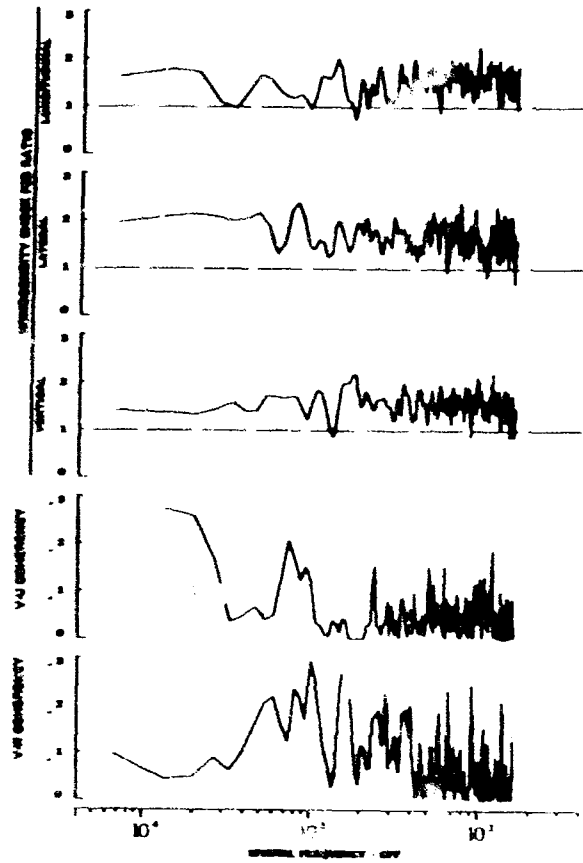
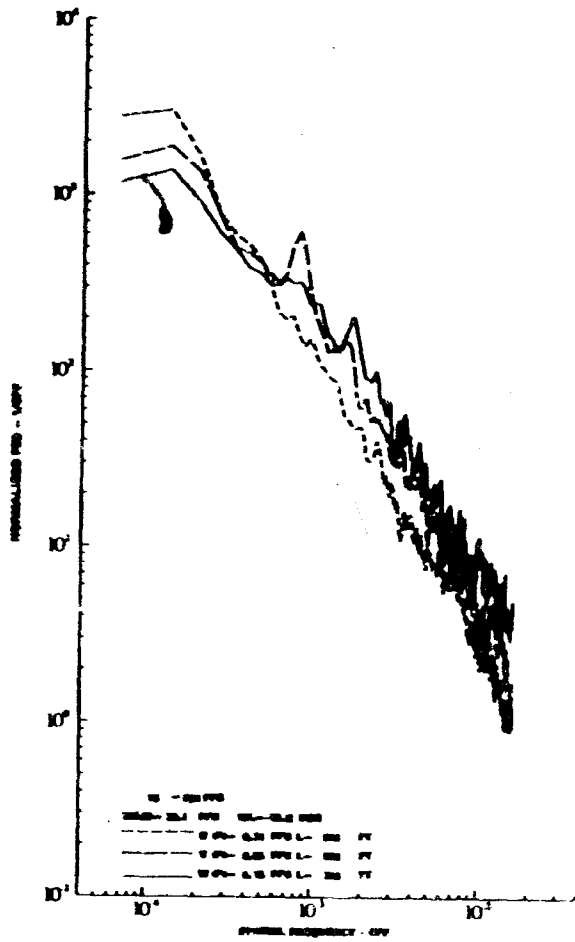
Turbulence Spectra Data For Test 195, Log 3, Category 113243





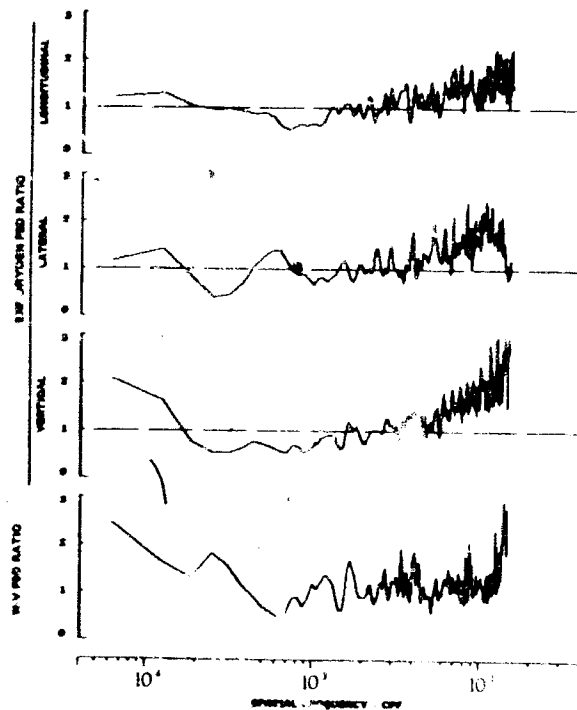
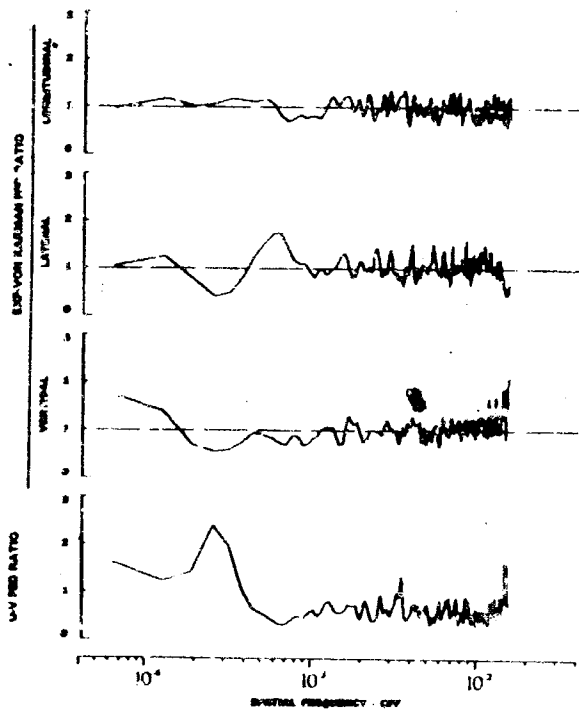
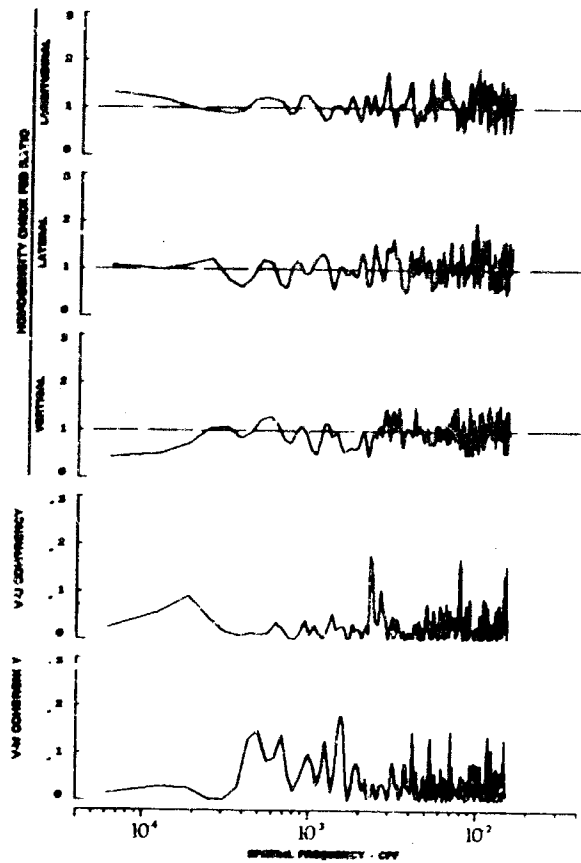
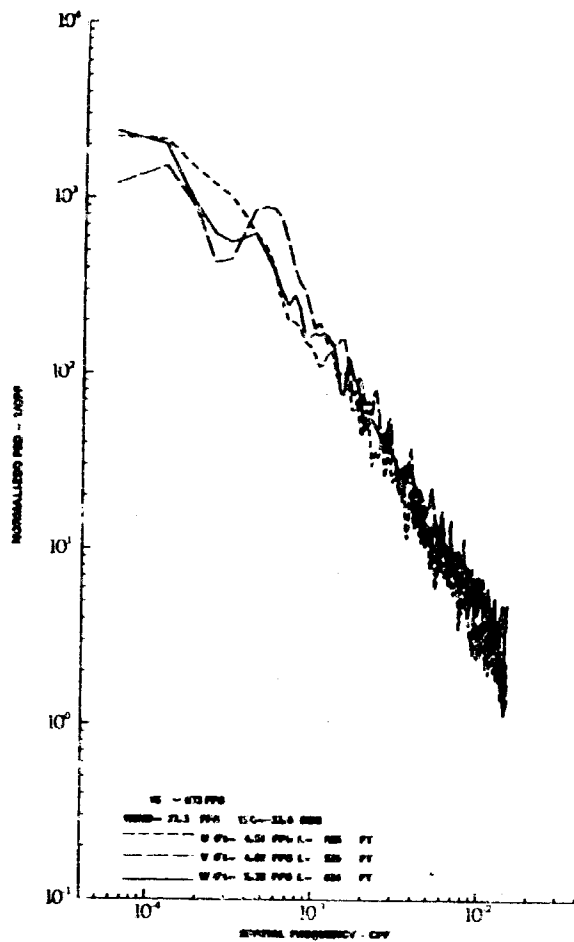




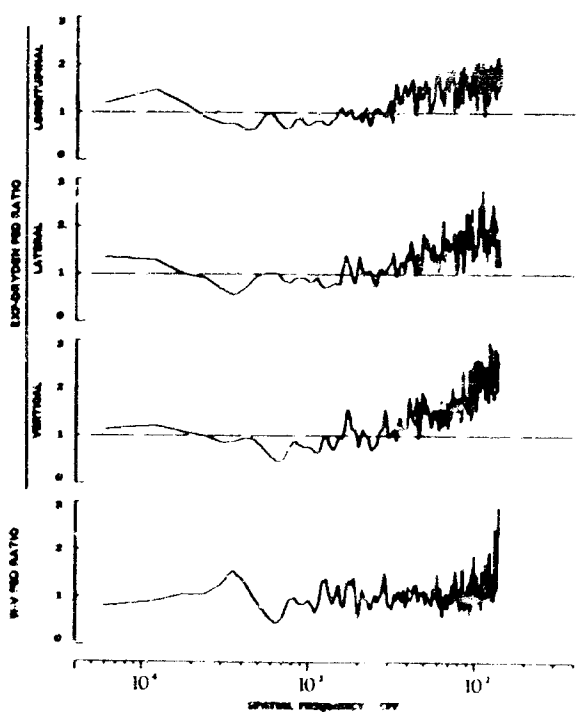
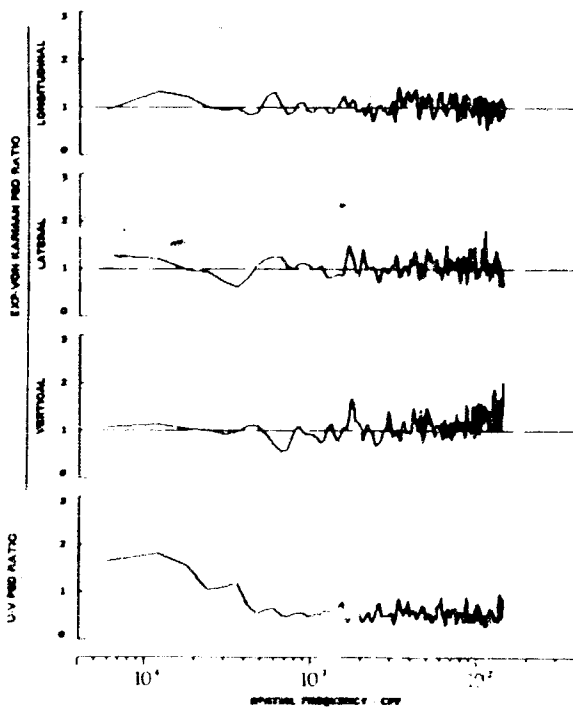
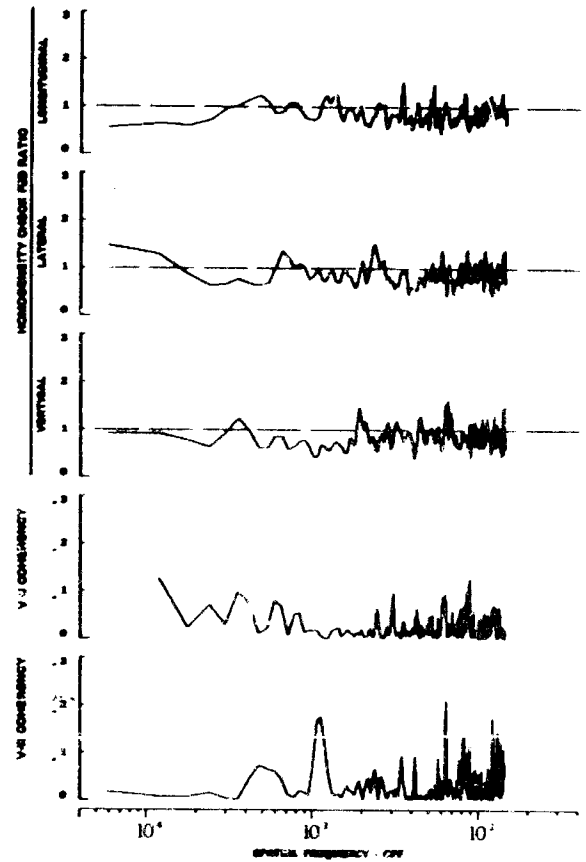
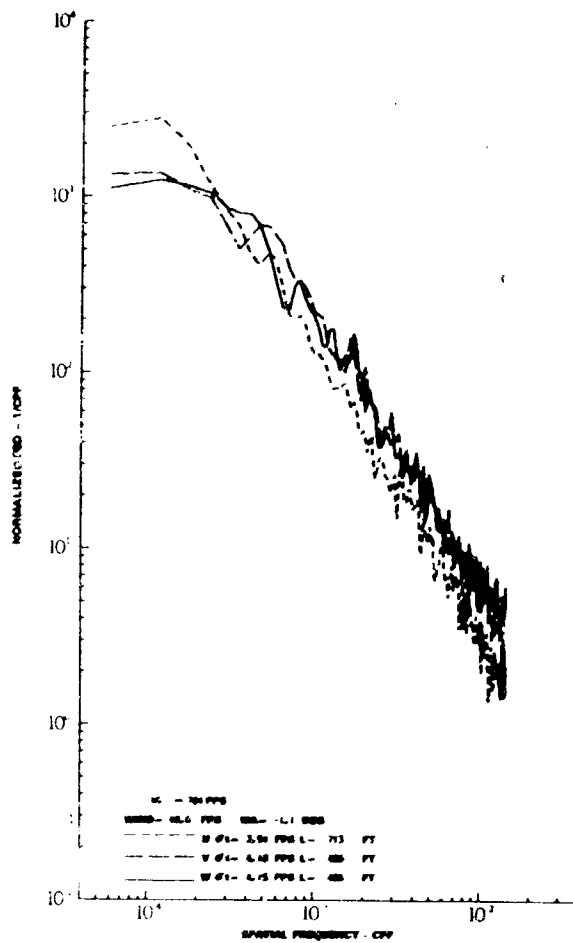


Turbulence Spectra Data For Test 196, Log 4, Category 114343

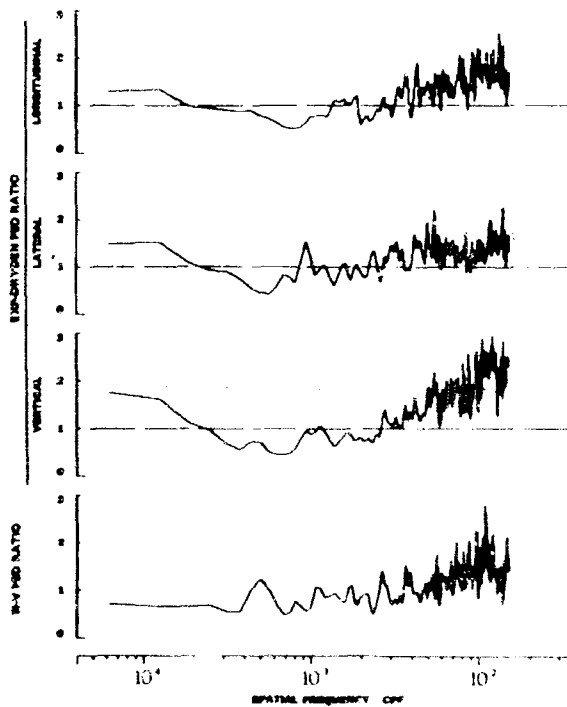
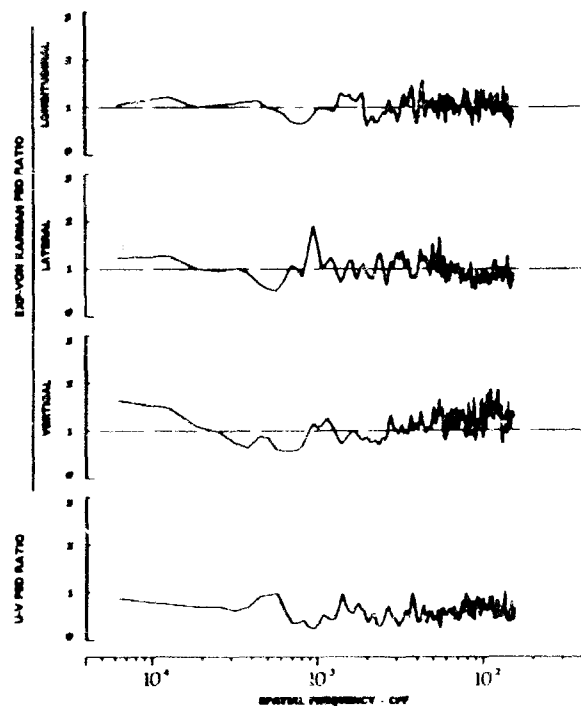
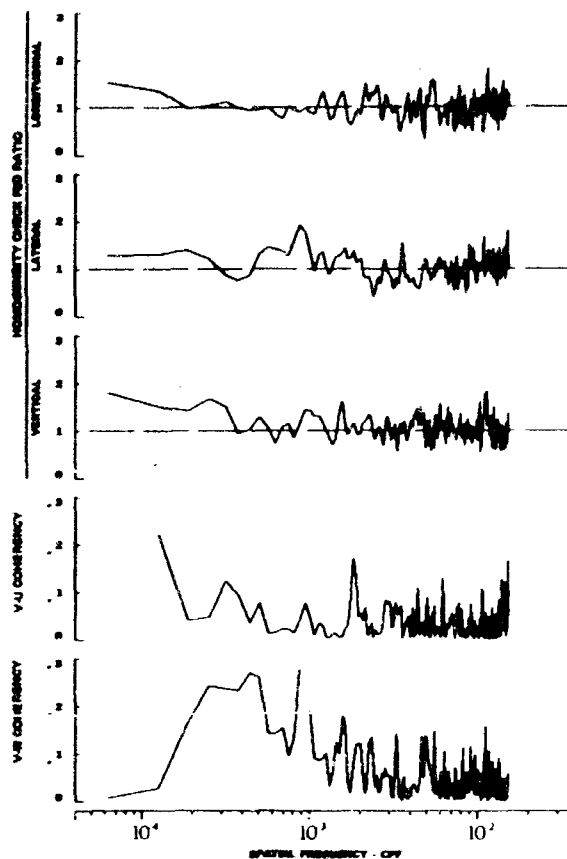
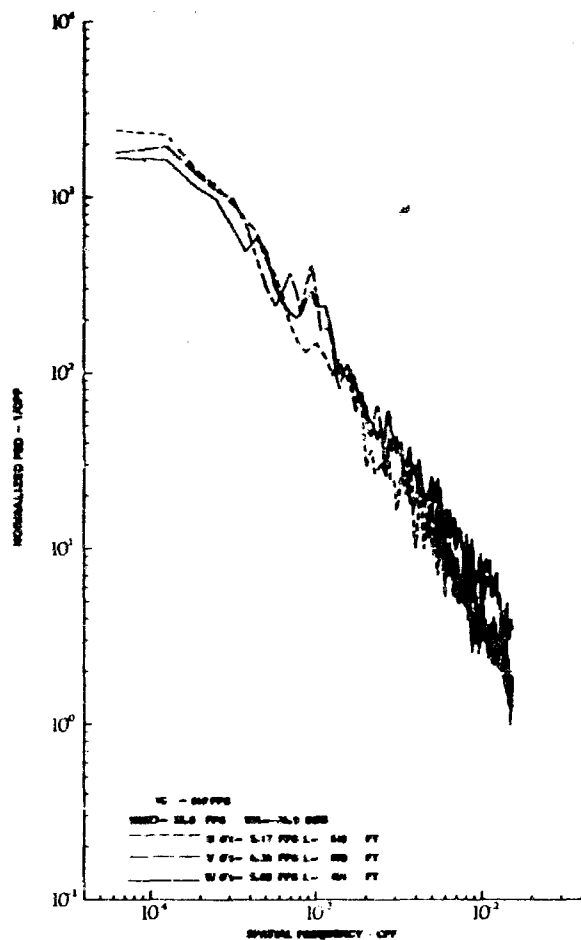




Turbulence Spectra Data For Test 197, Day 1, Category 122343

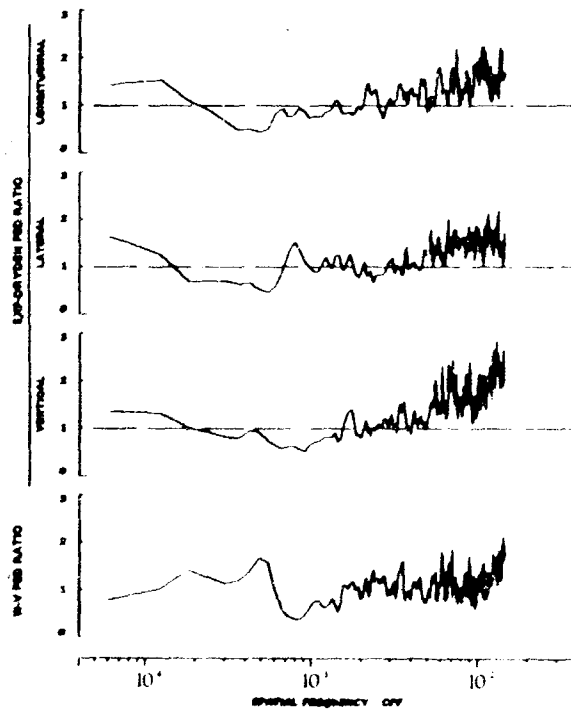
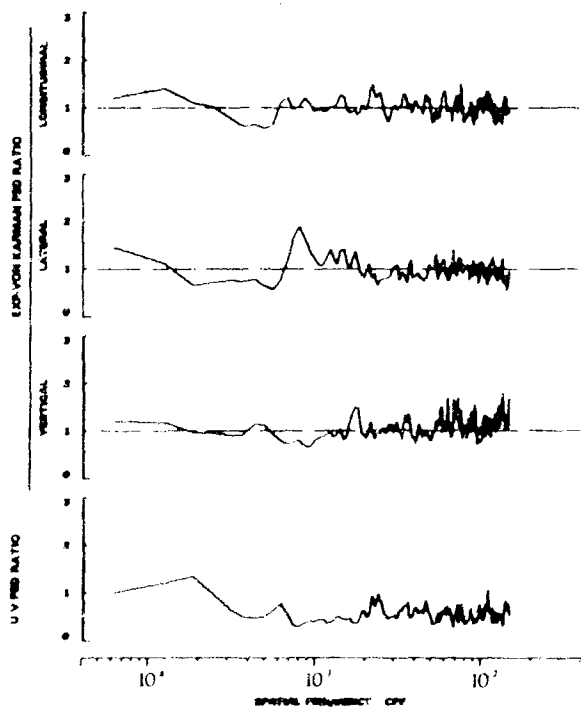
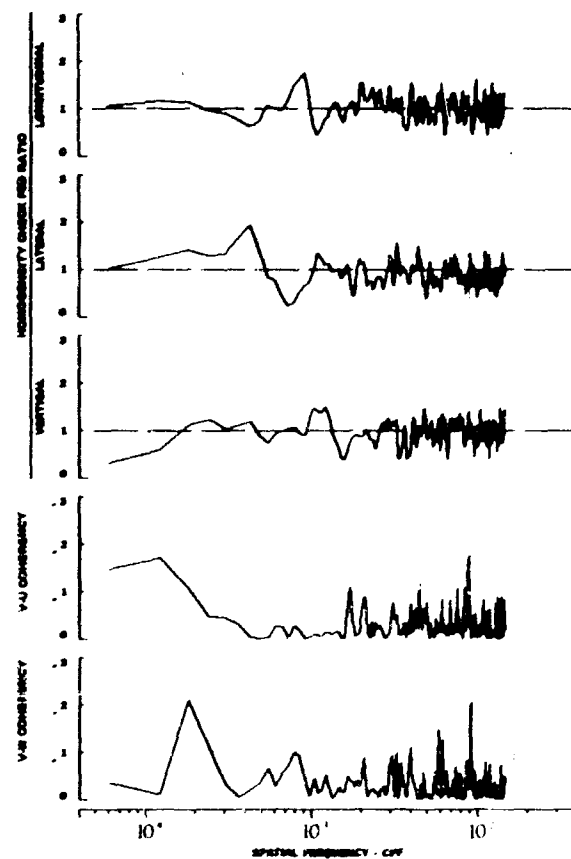


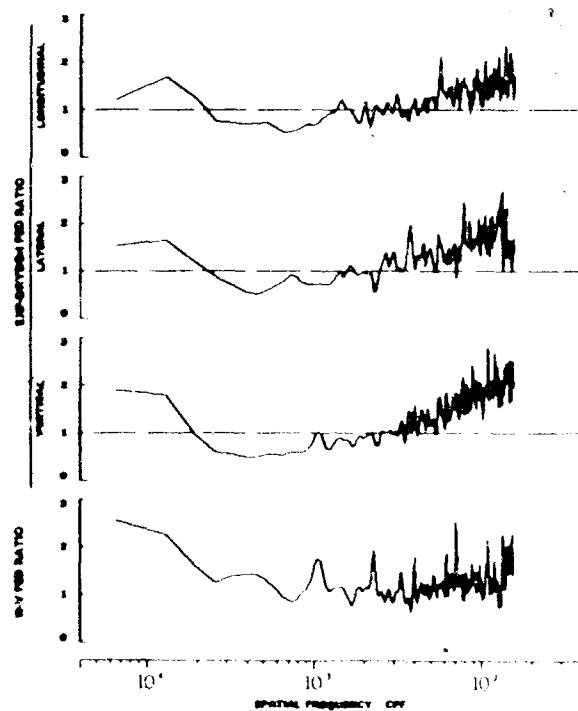
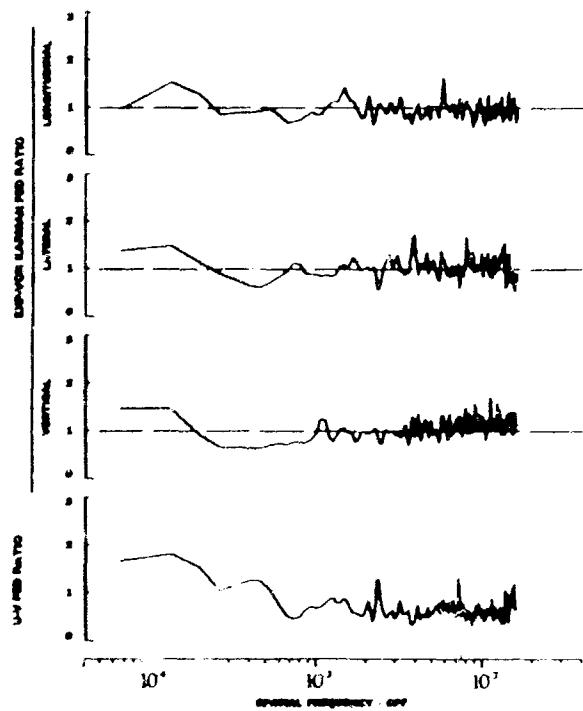
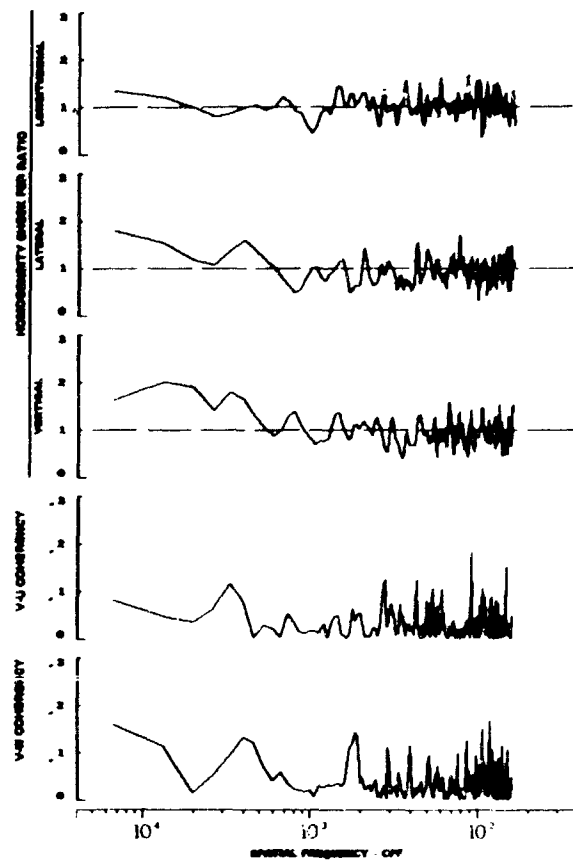
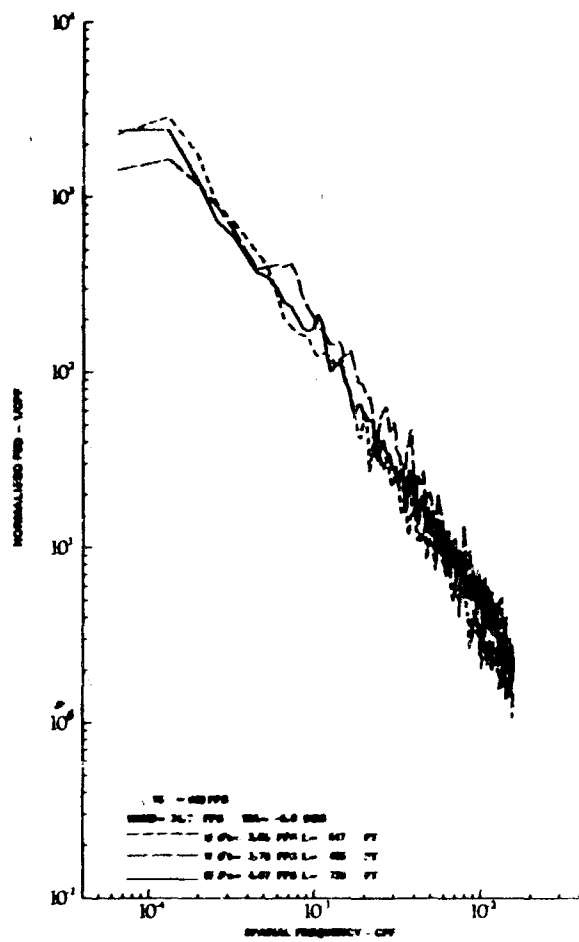
Turbulence Spectra Data For Test 197, Leg 3, Category 123343



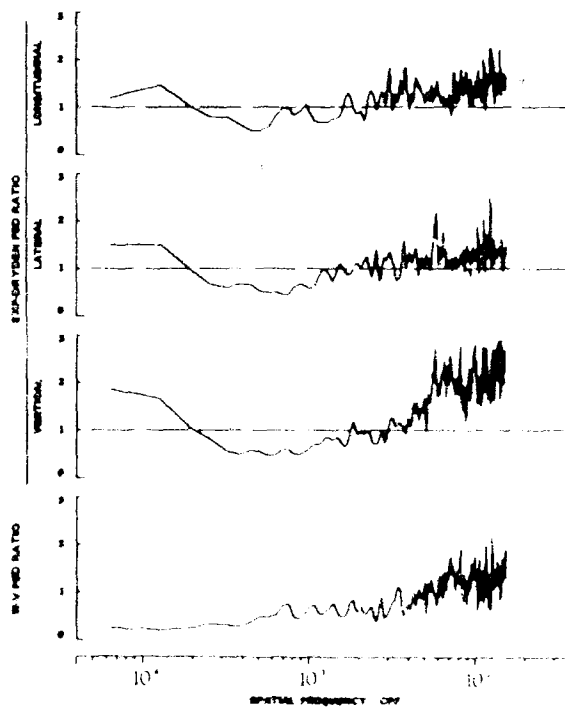
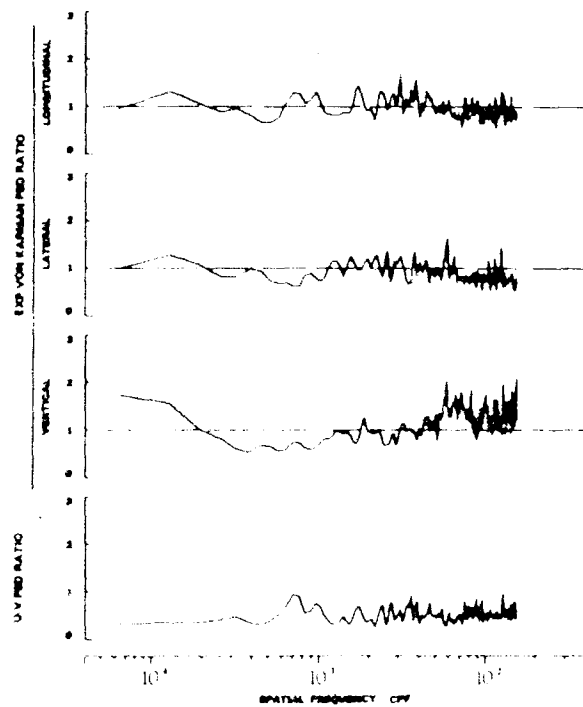
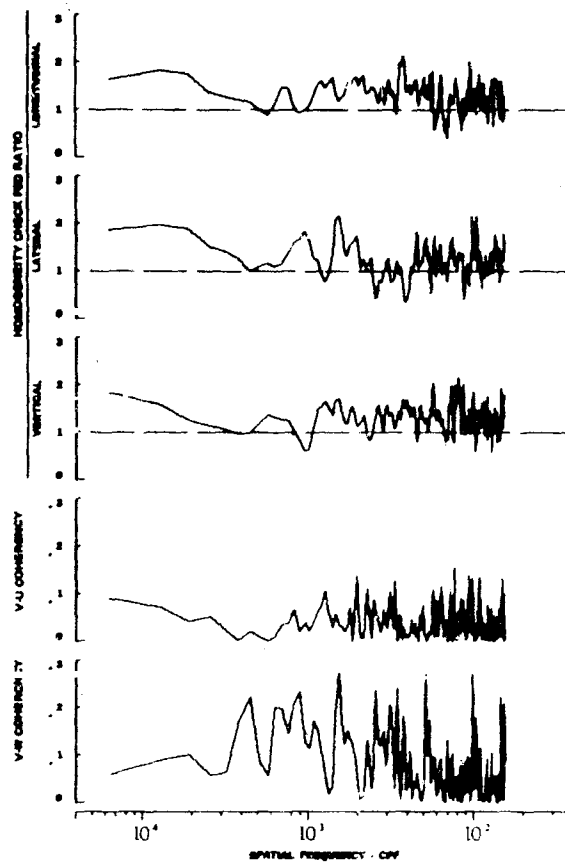
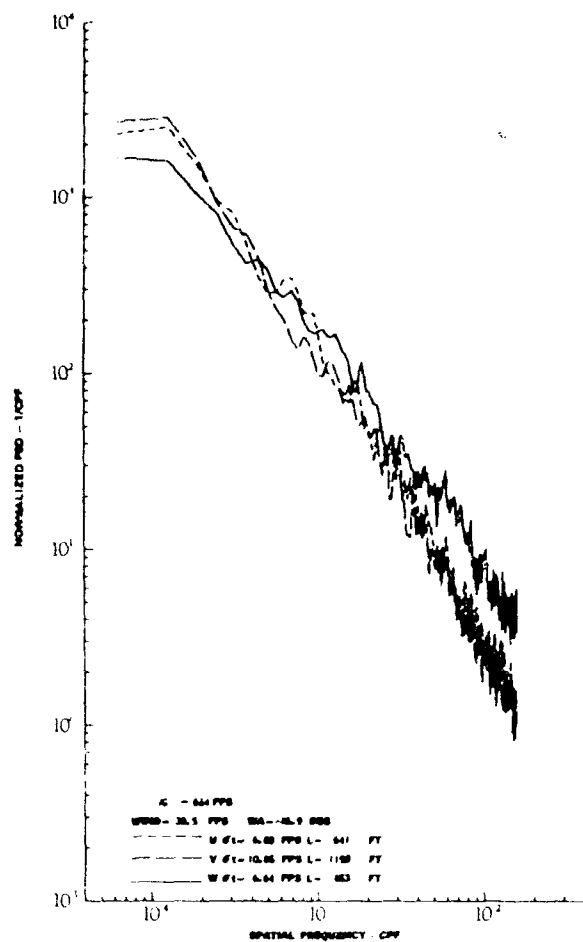
Turbulence Spectra Data for Test 197, Leg 5, Category 124543



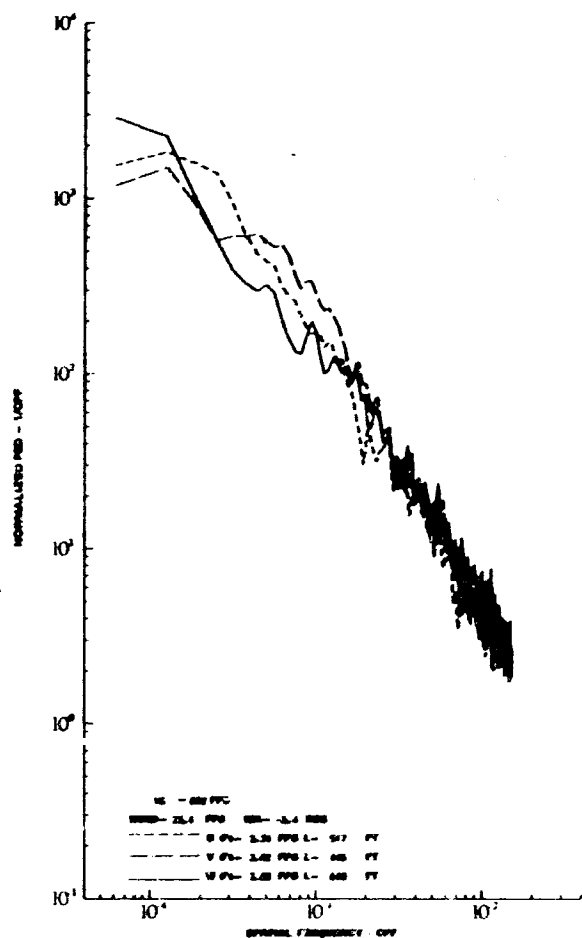


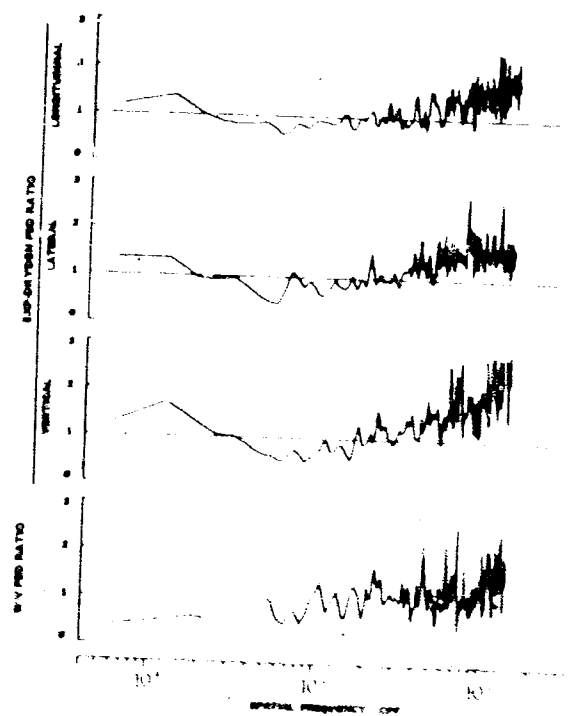
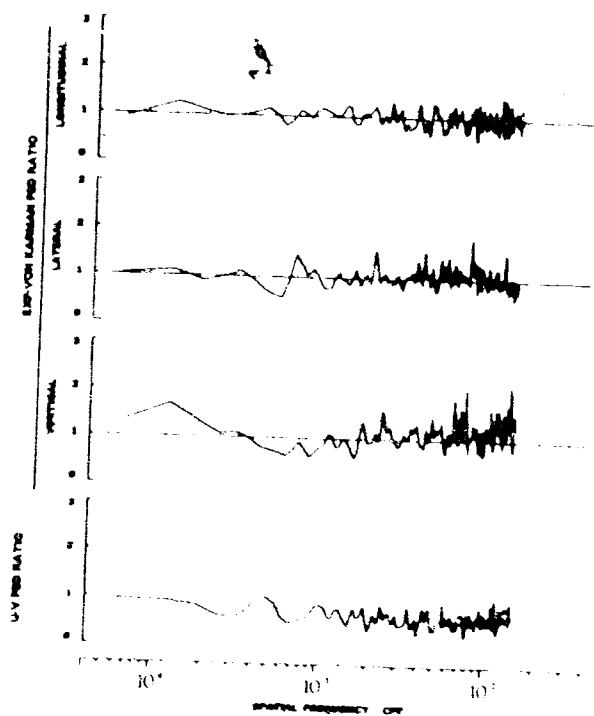
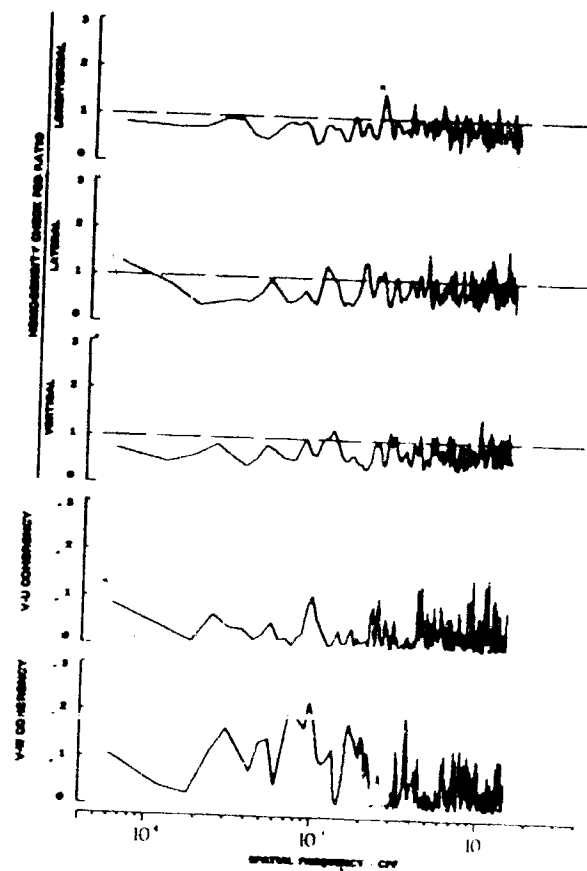


Turbulence Spectra Data For Test 198, Leg 2, Category 112343

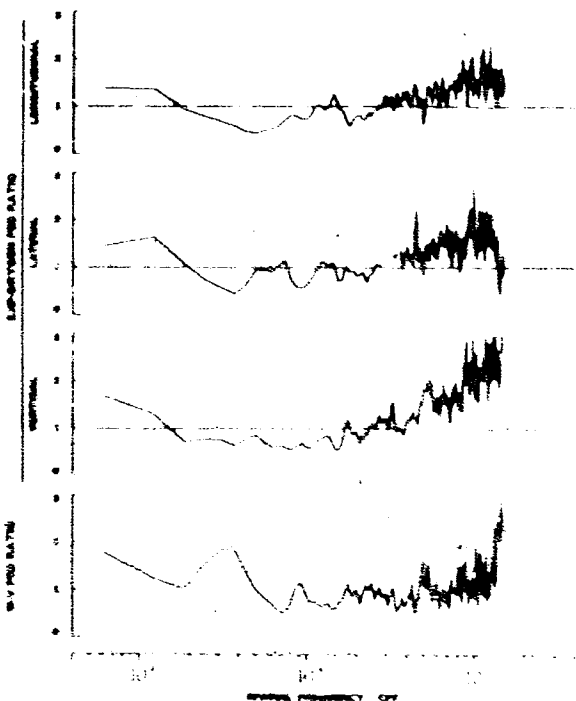
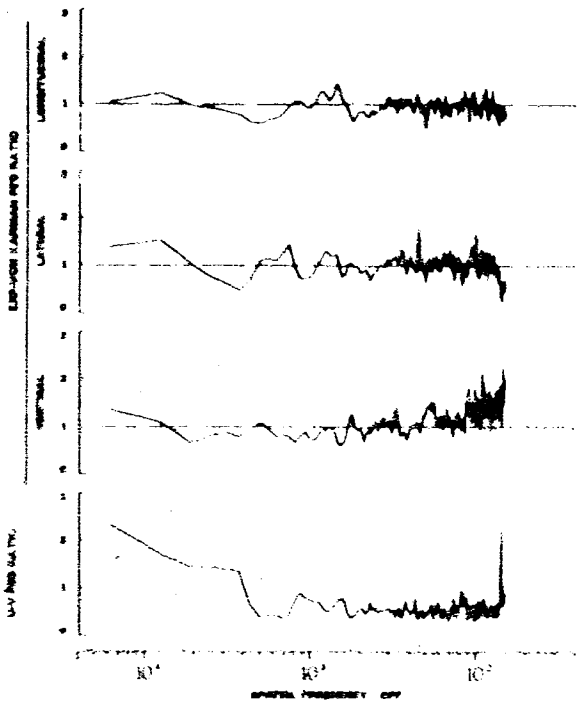
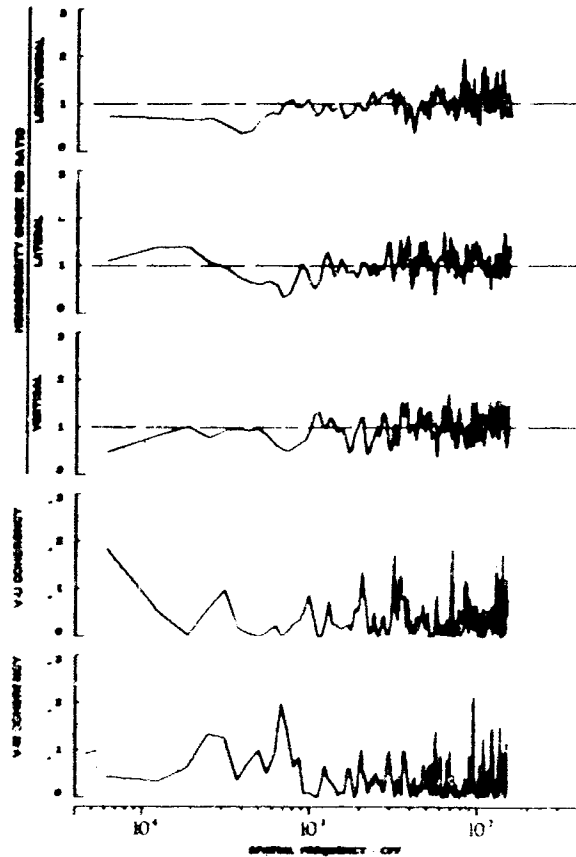
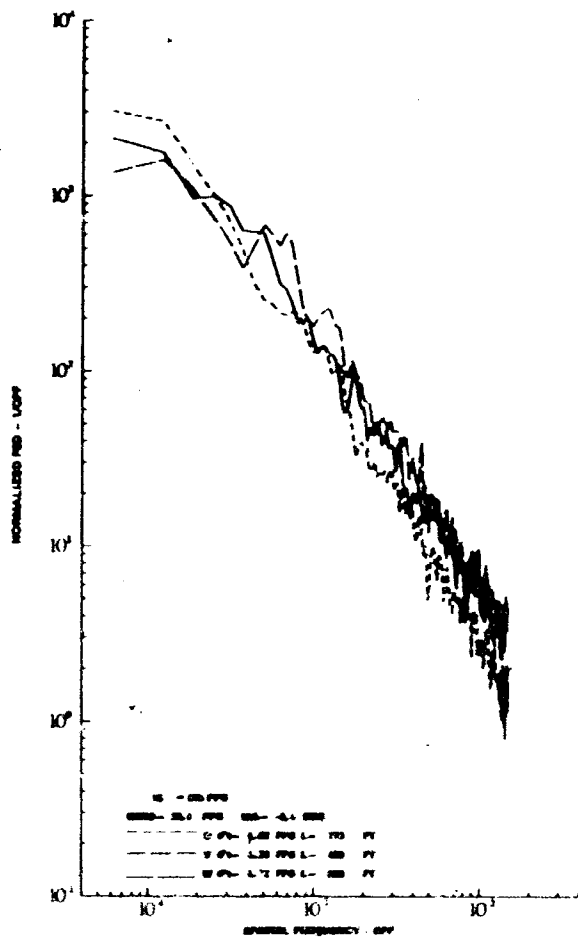


Turbulence Spectra Data For Test 199, Leg 5, Category 122143

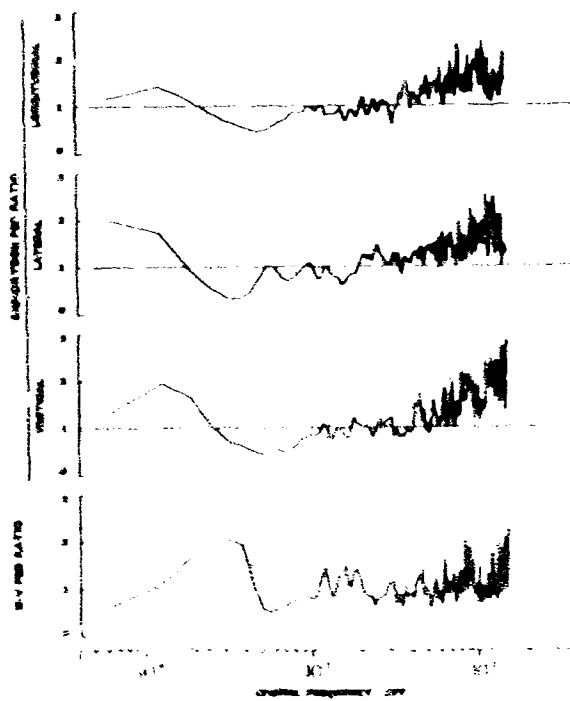
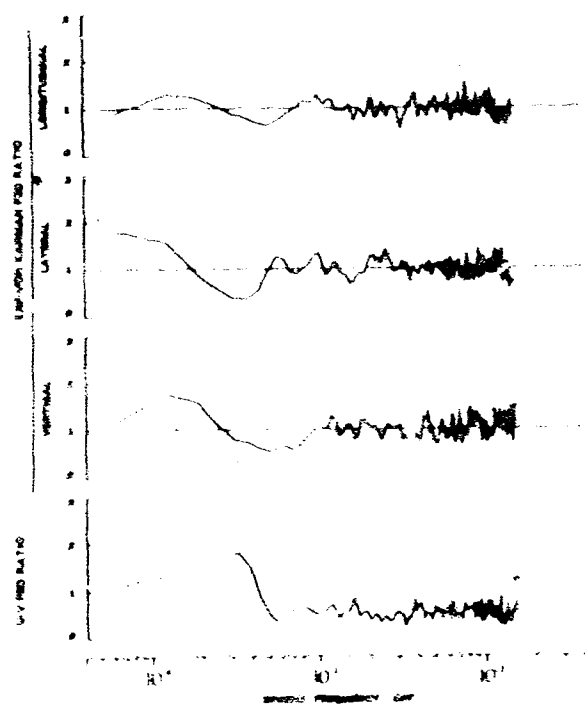
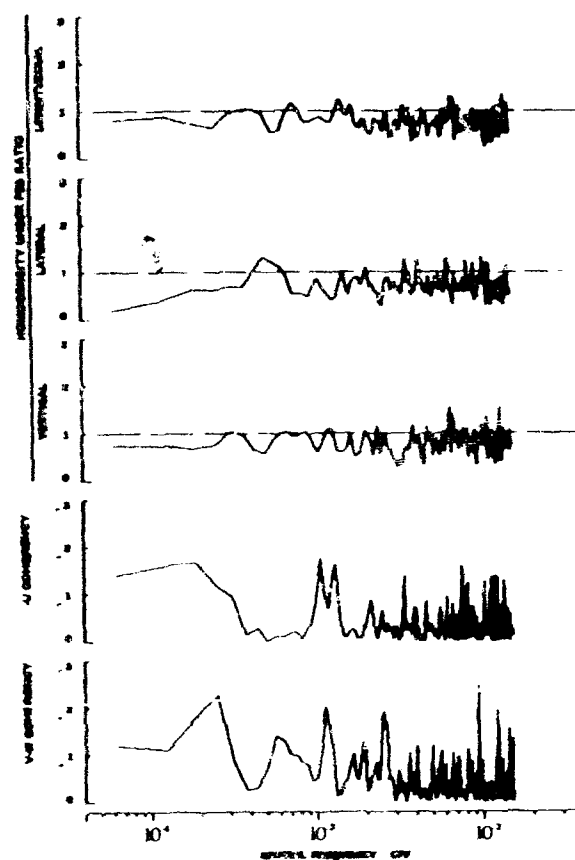




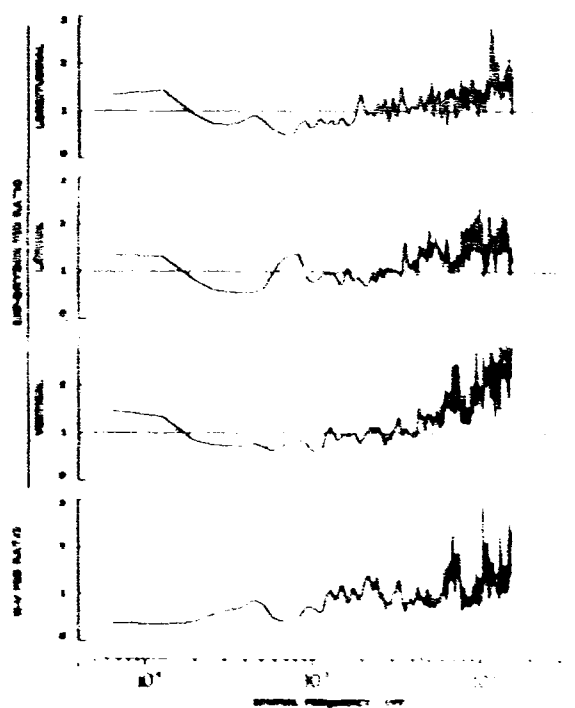
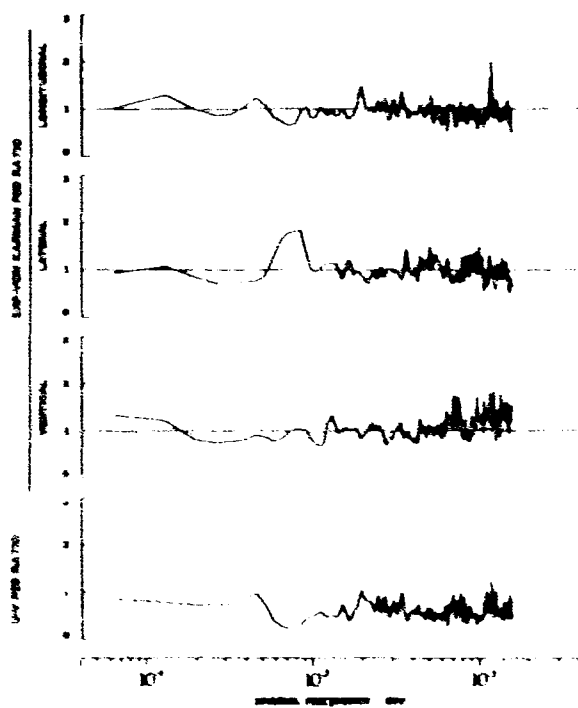
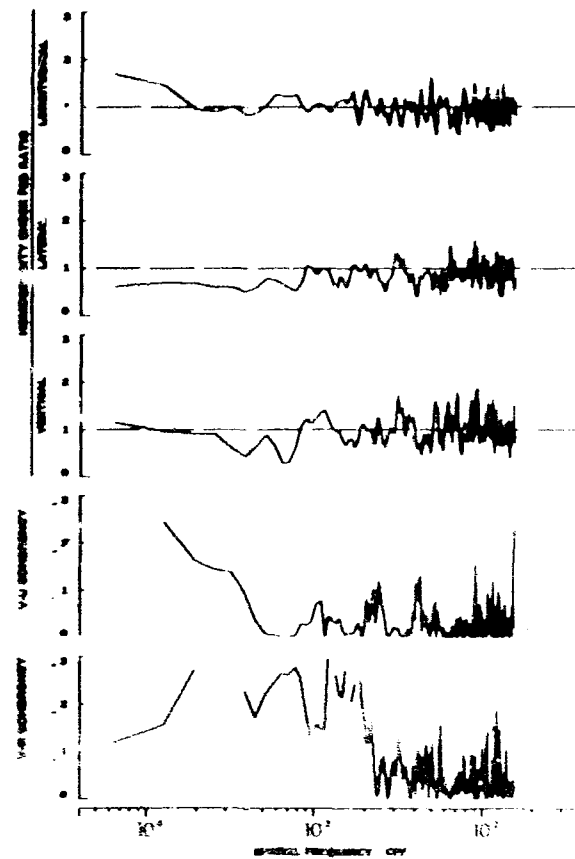
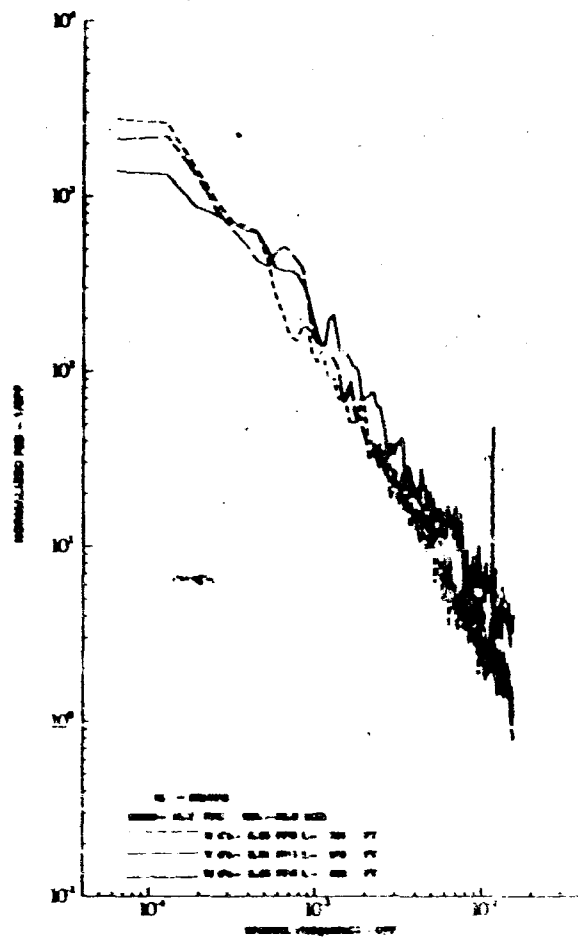
Turbulence Spectra Data For Test 200, Leg 6, Category 122243



Turbulence Spectra Data For Test 291, Leg 1, Category 121343

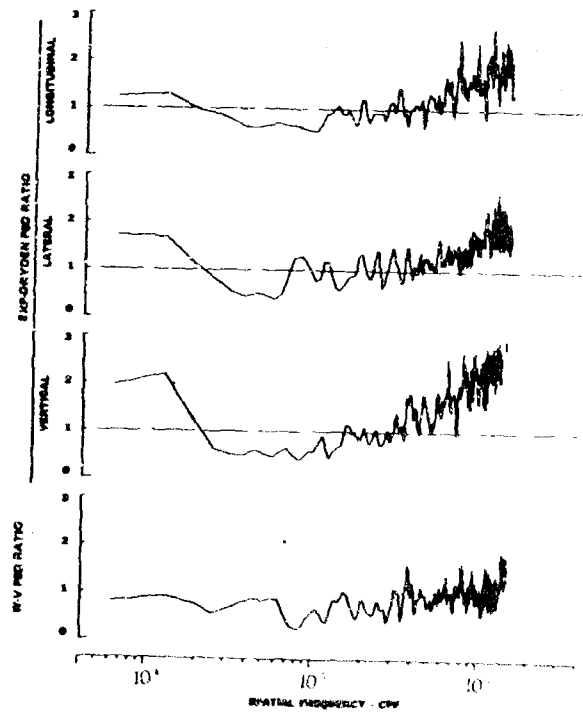
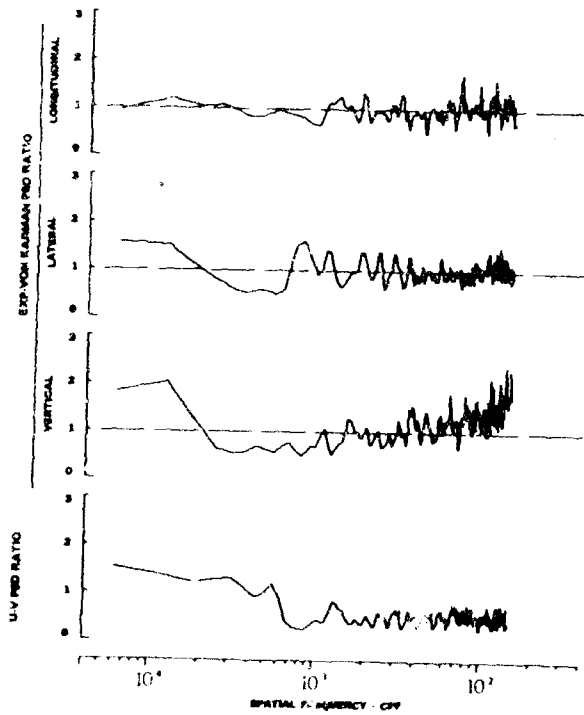
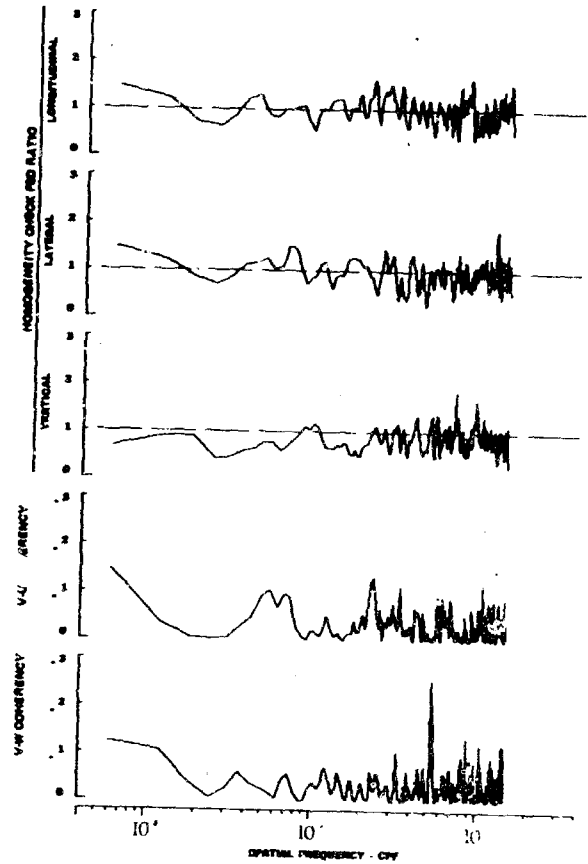
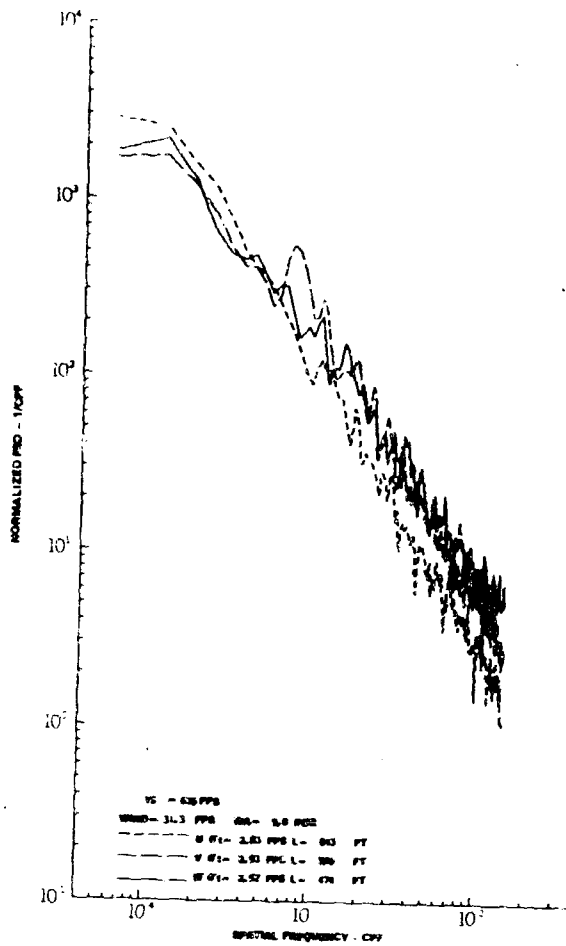


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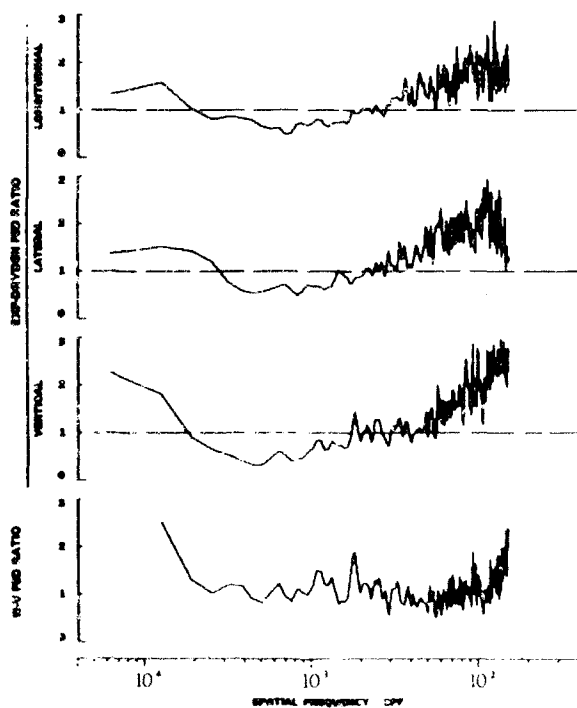
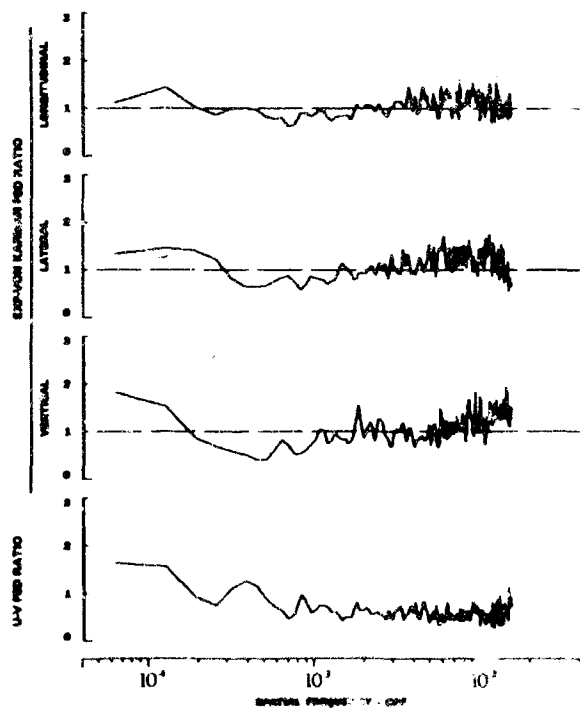
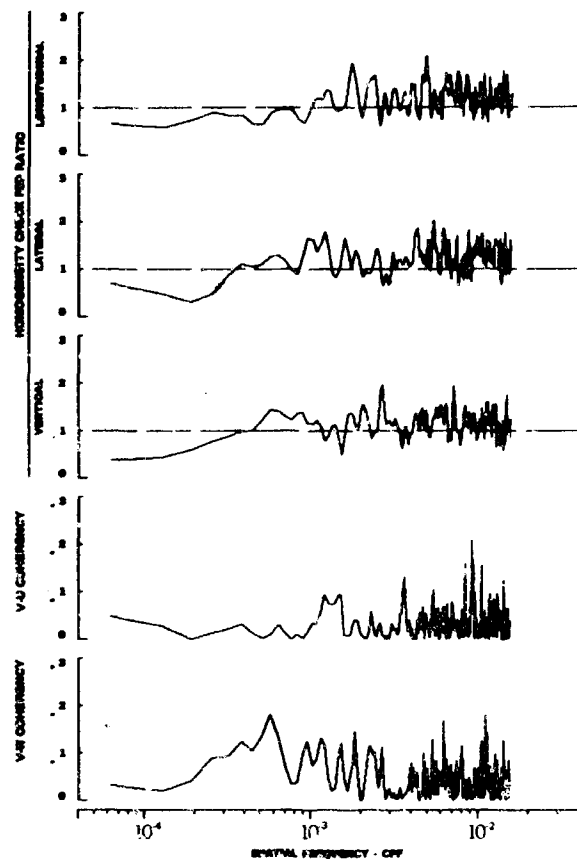
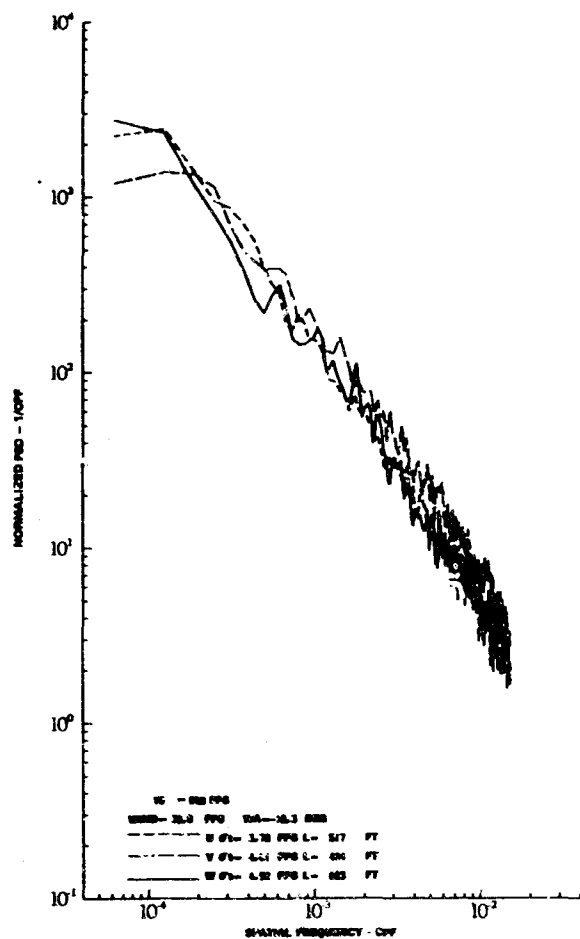


Excitation Spectra Data For Test 201, Log 5, Category 122343

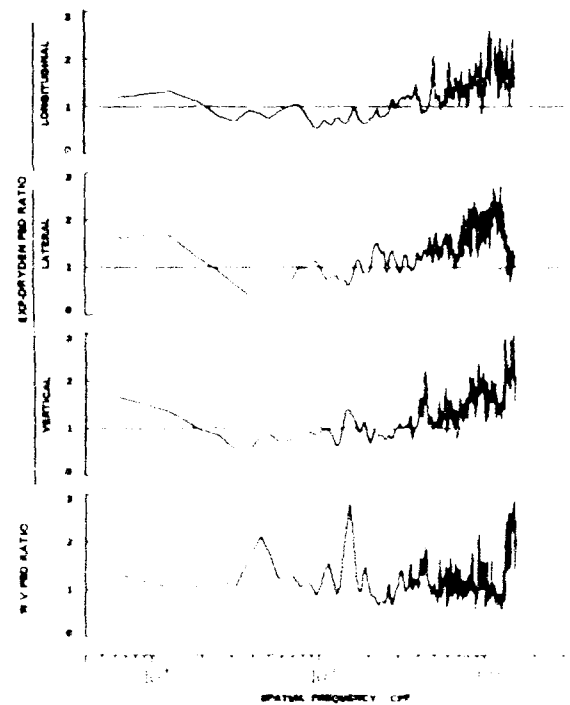
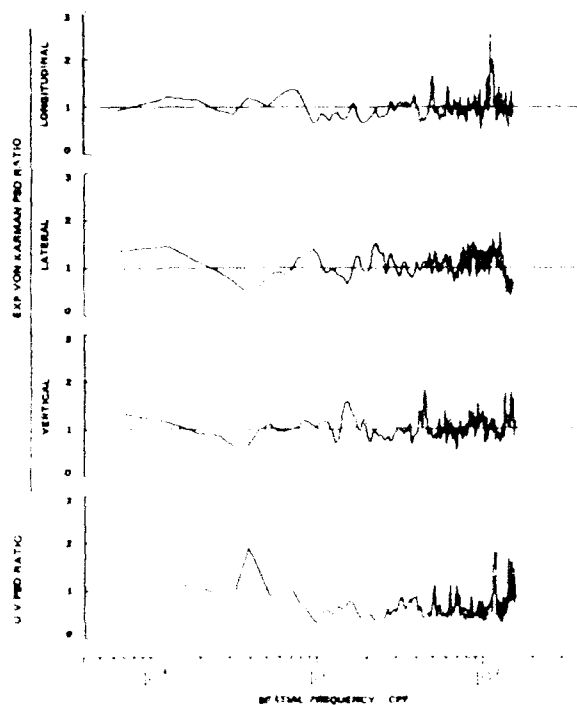
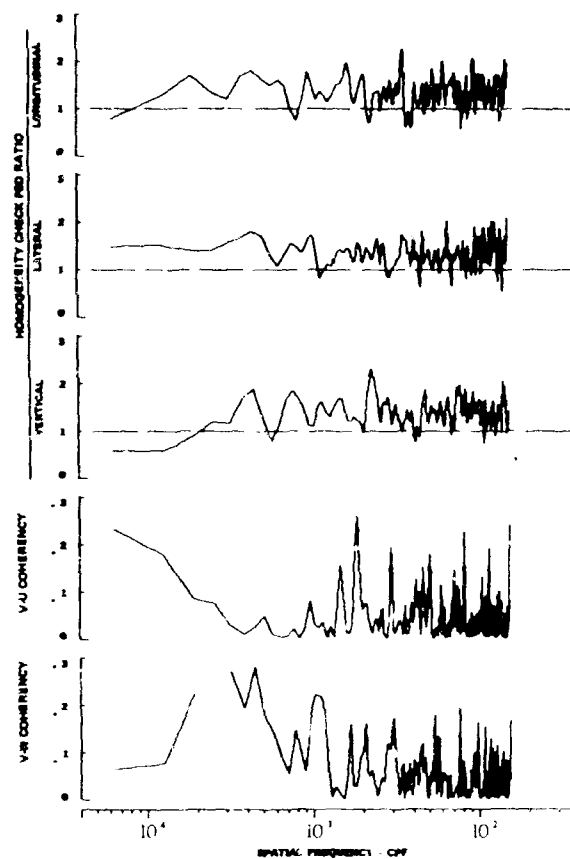
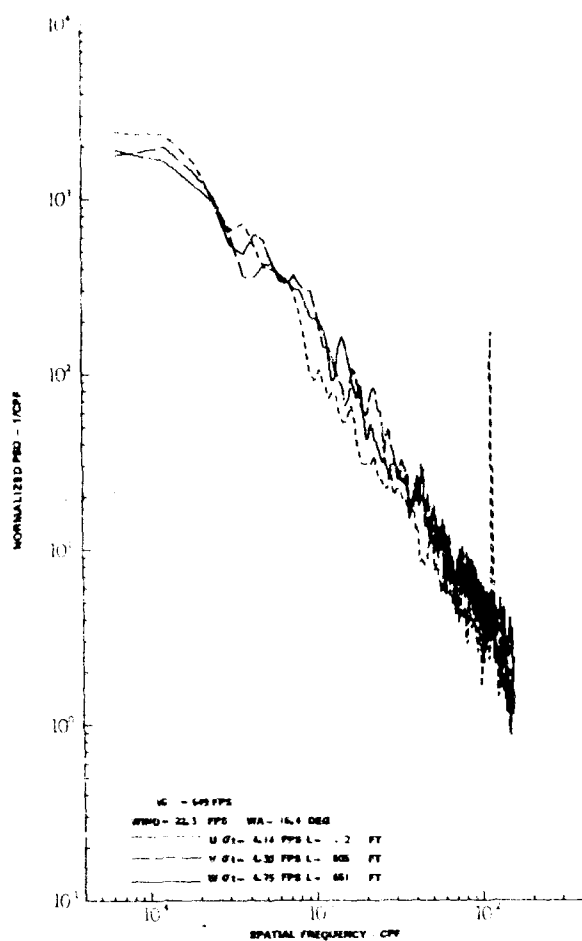




Turbulence Spectra Data For Test 201, Leg 7, Category 122343

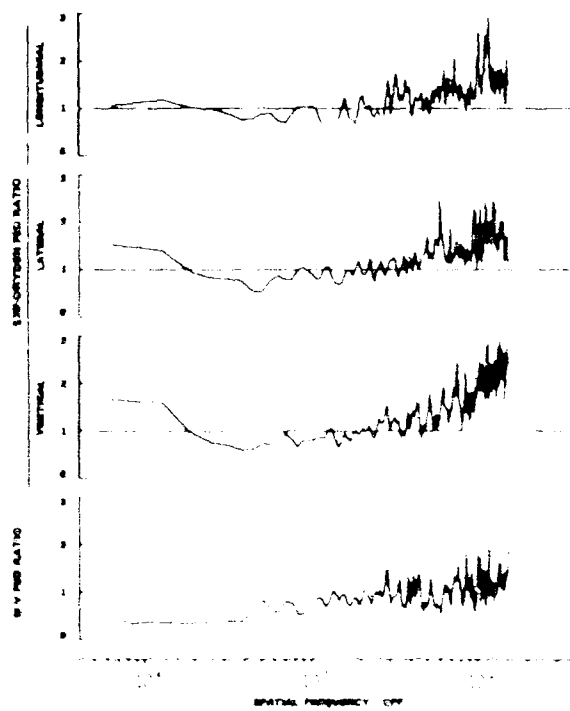
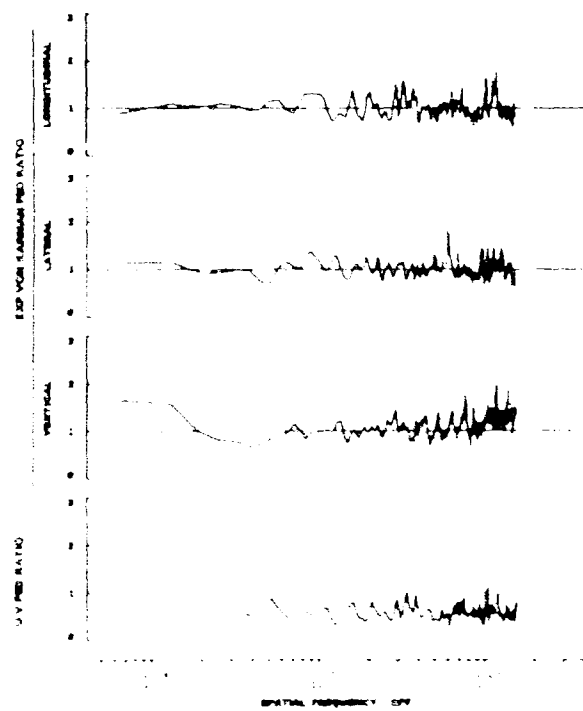
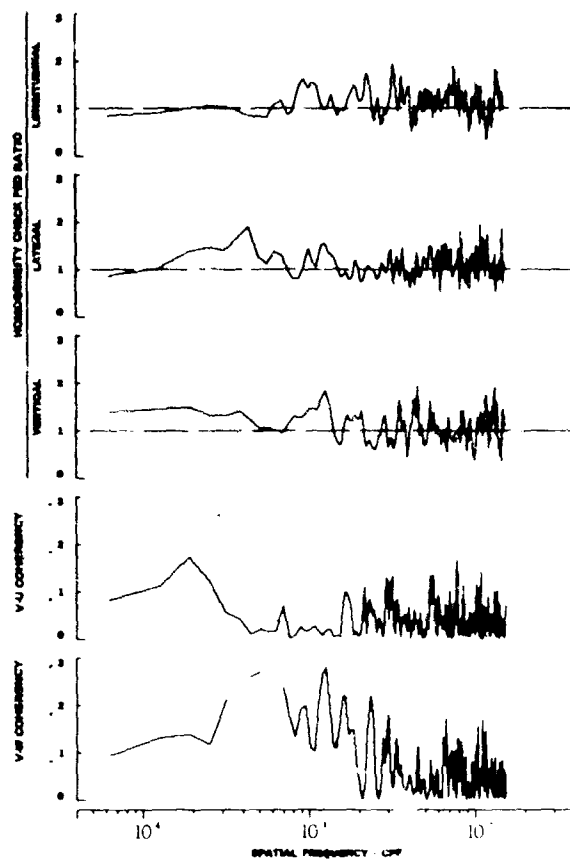
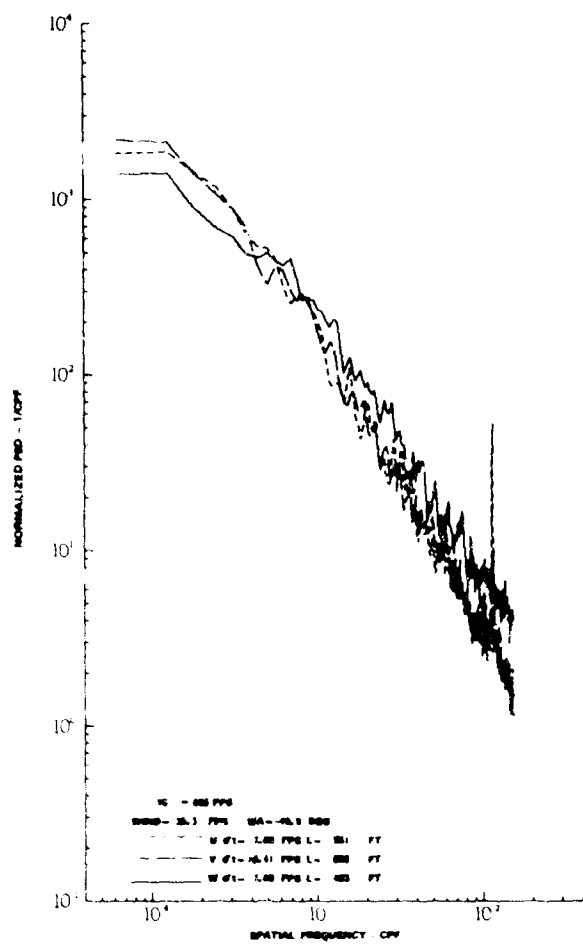


Turbulence Spectra Data For Test 20, Log 1, Category 112343

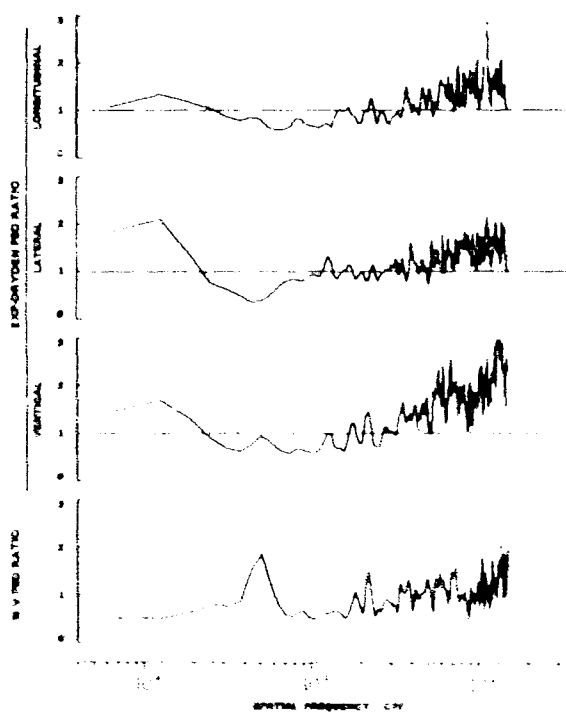
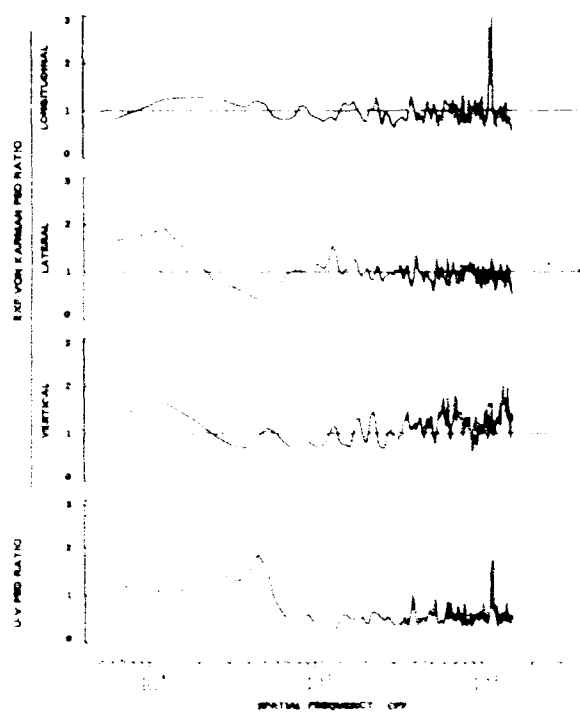
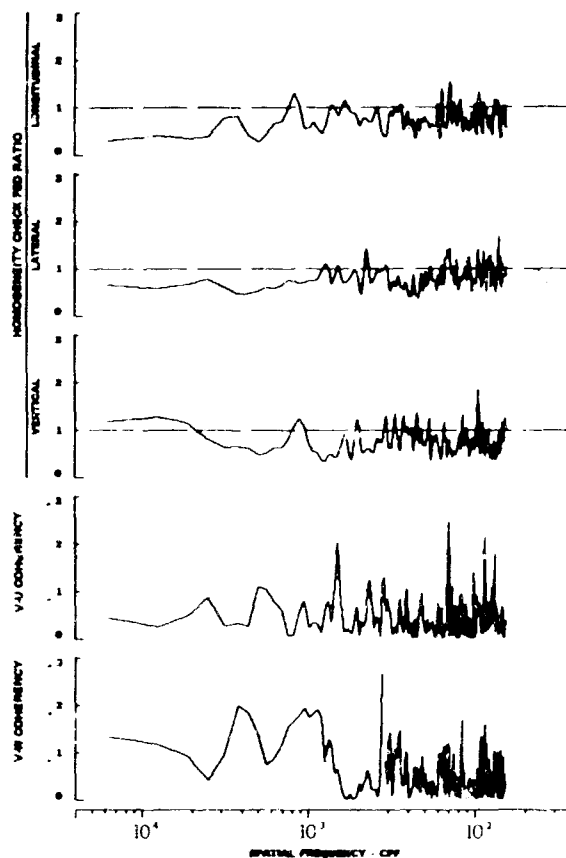
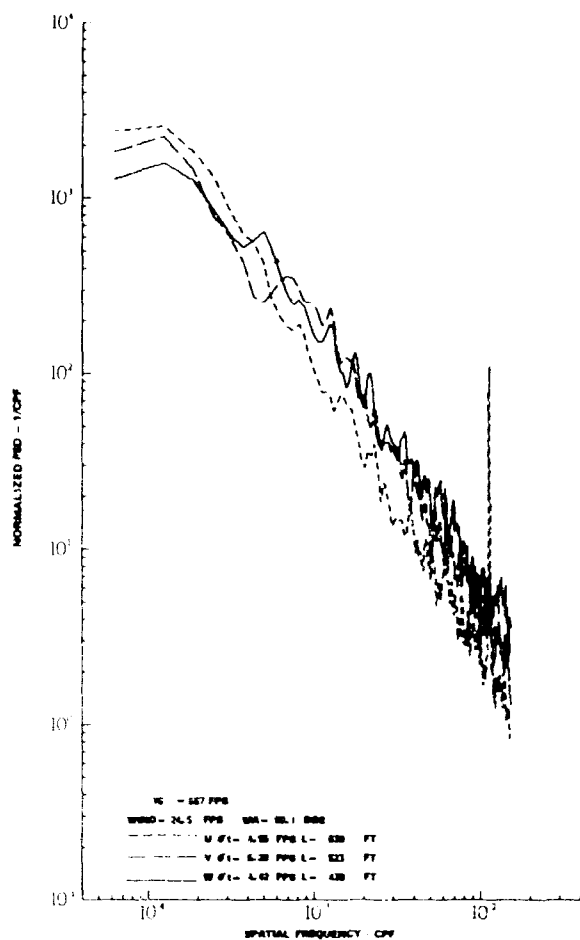


Turbulence Spectra Data For Test 209, Leg 1, Category 122241

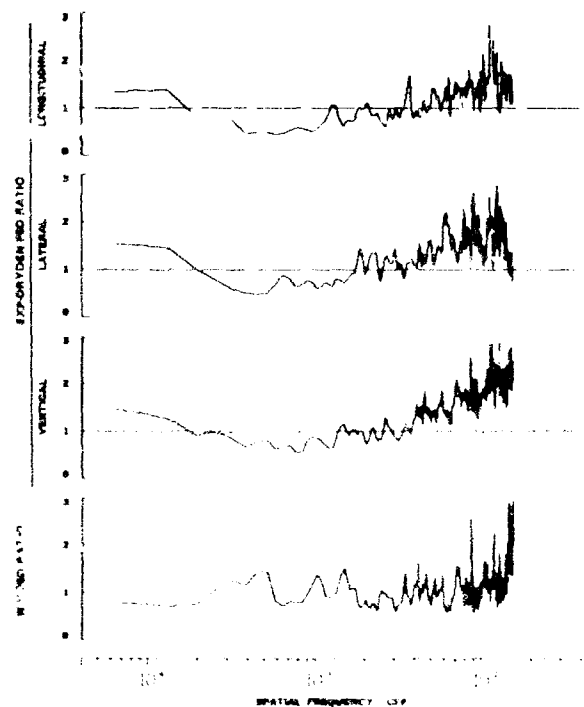
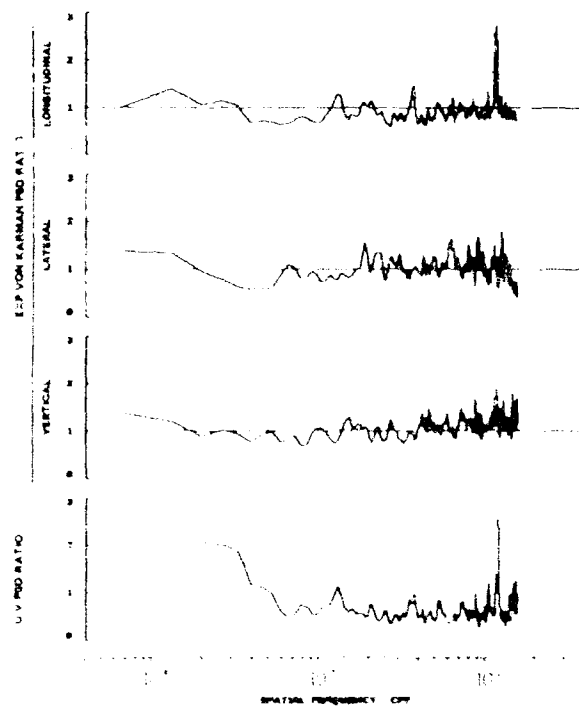
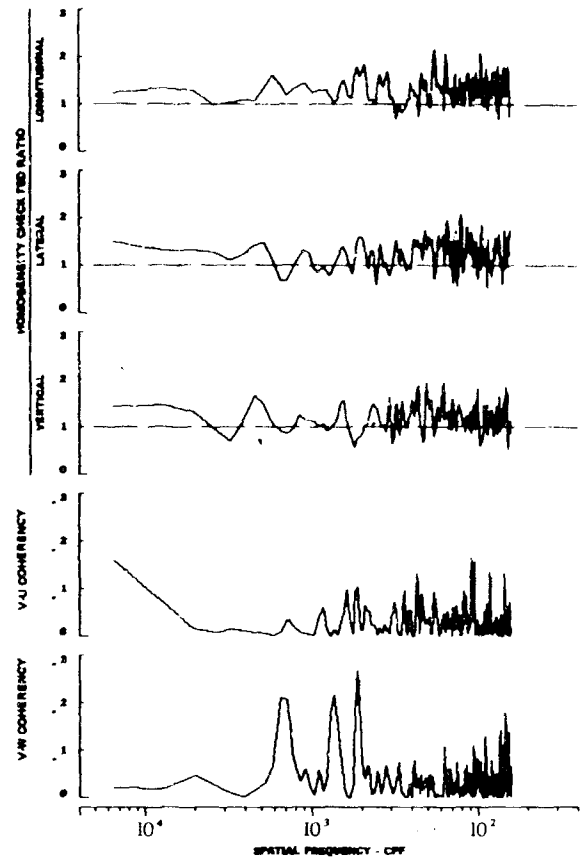
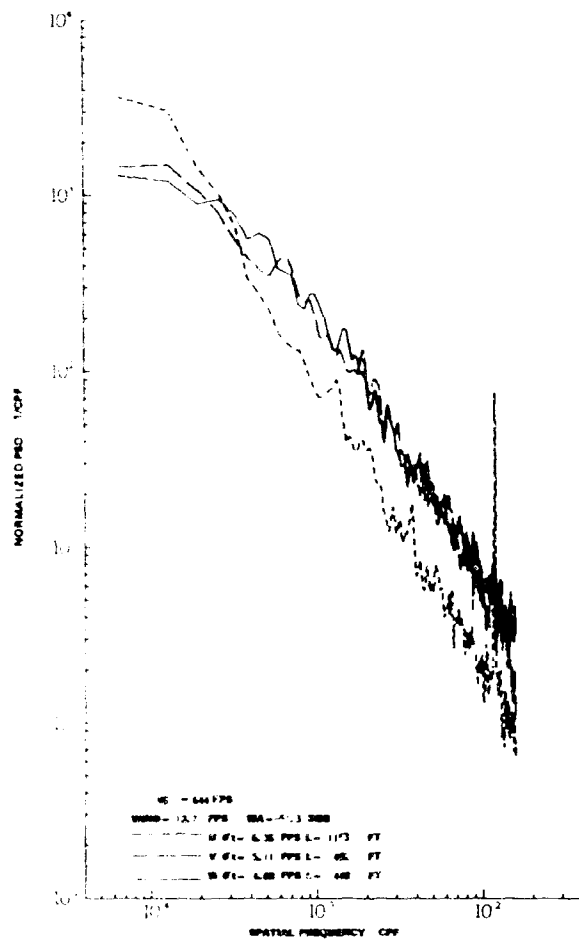




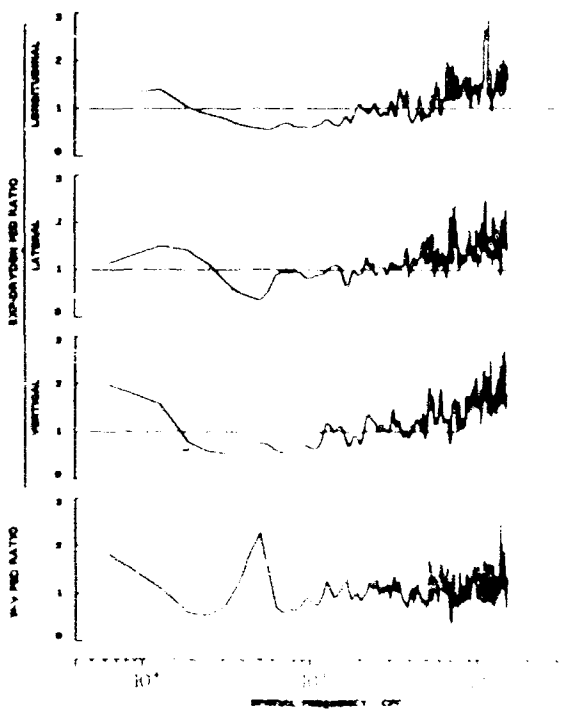
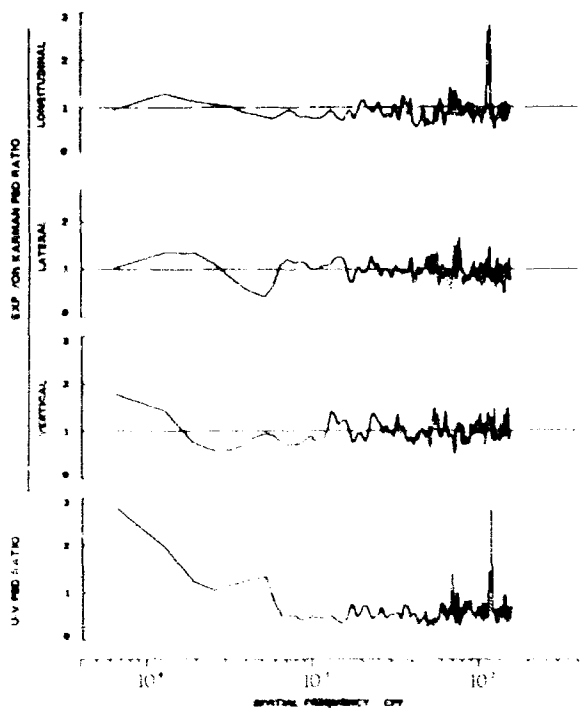
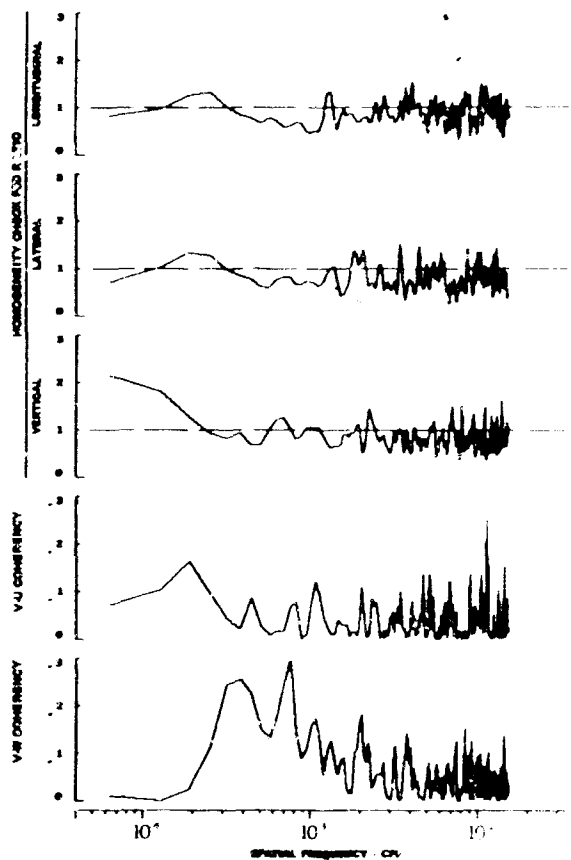
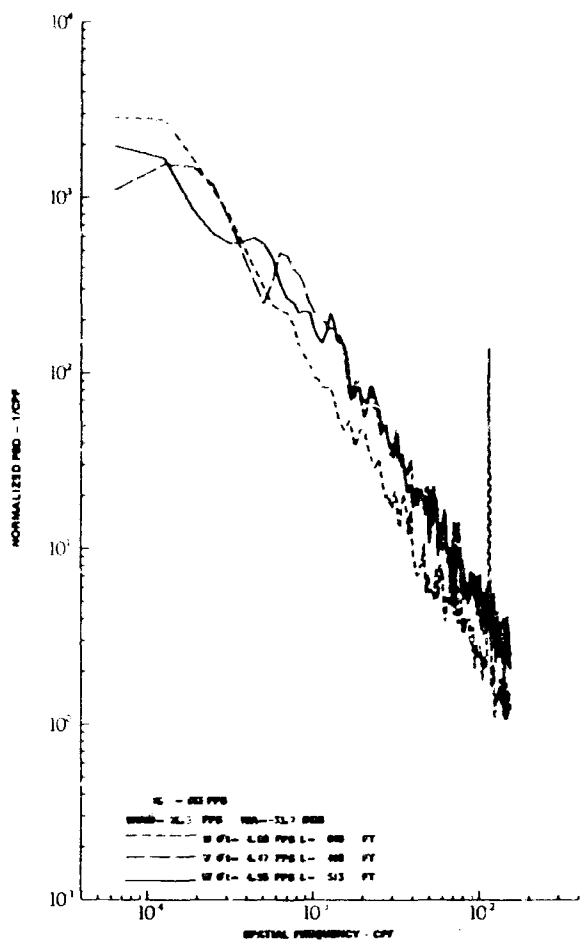
Turbulence Spectra Data For Test 209, Leg 5, Category 122243



Turbulence Spectra Data For Test 209, Leg 7, Category 122243

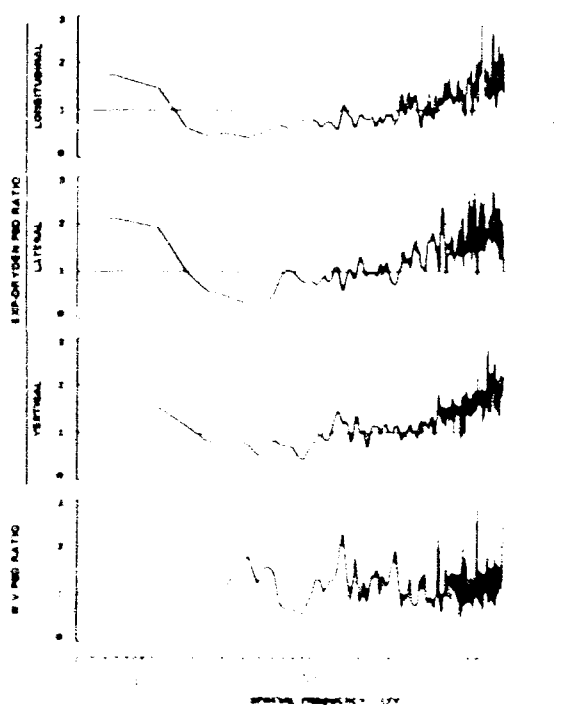
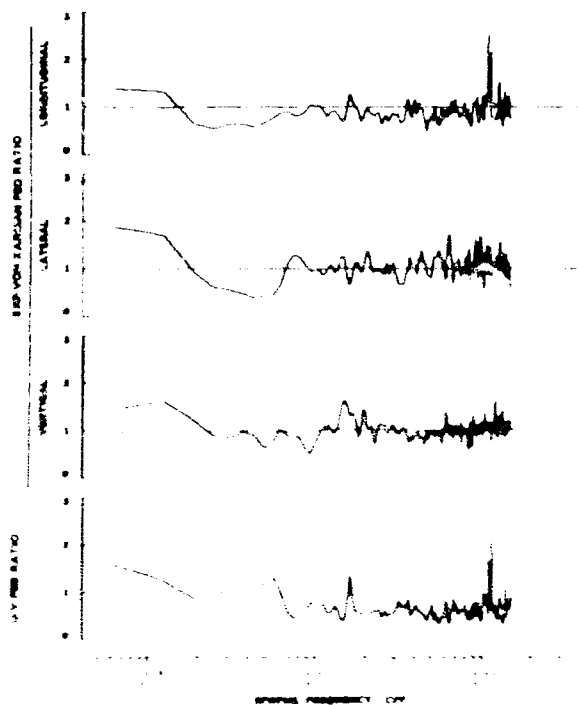
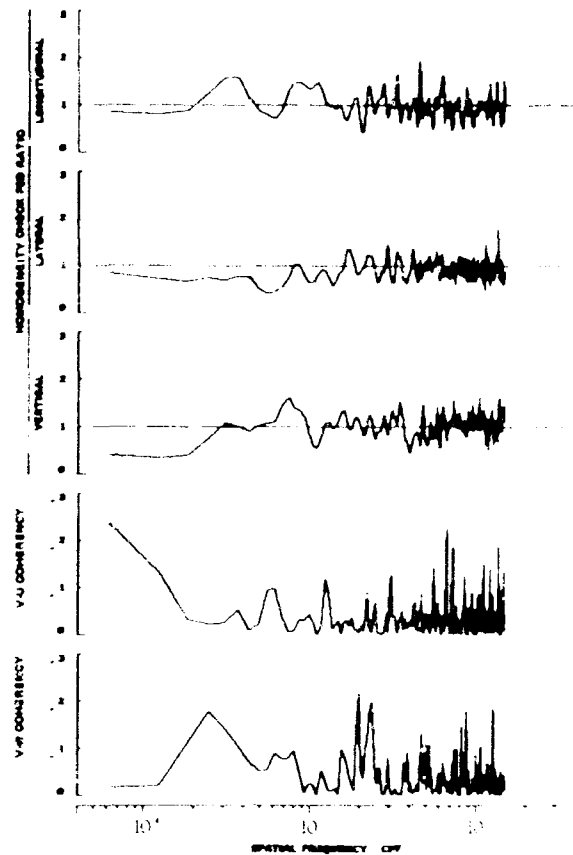
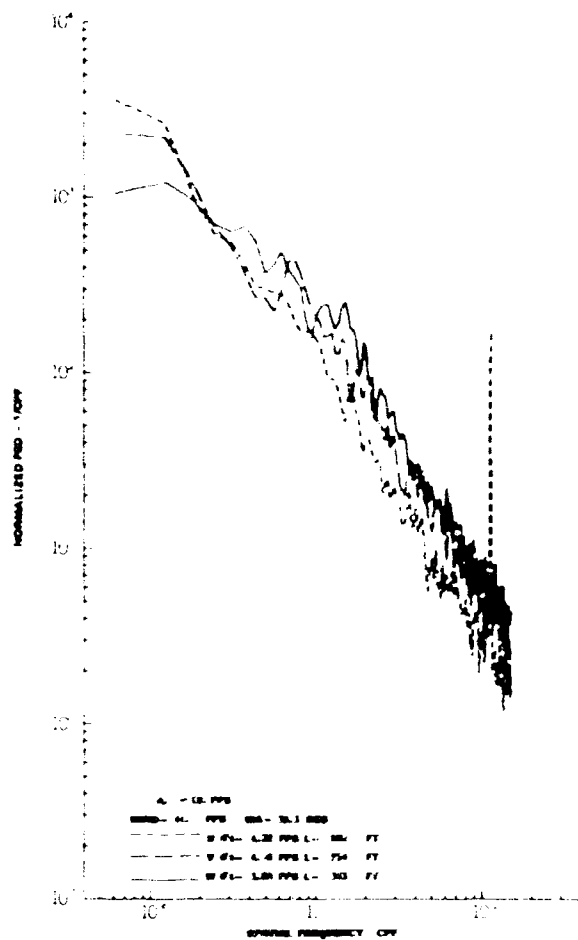


Turbulence Spectra Data For Test 210, Leg 2, Category 123343



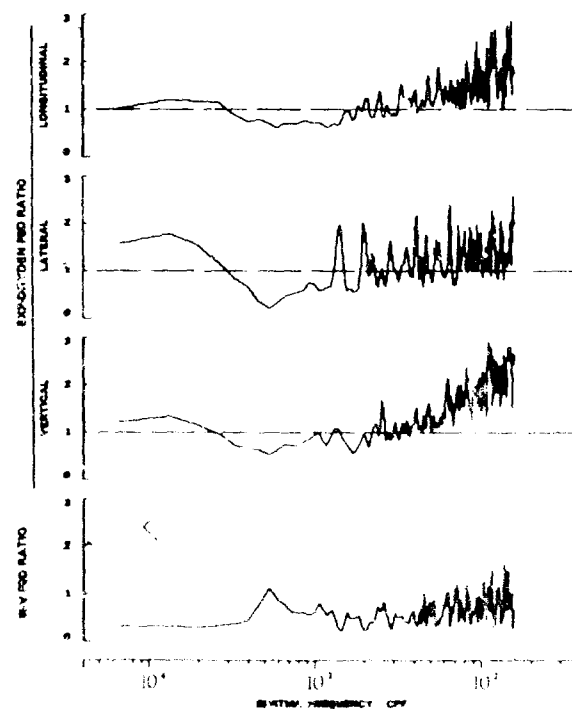
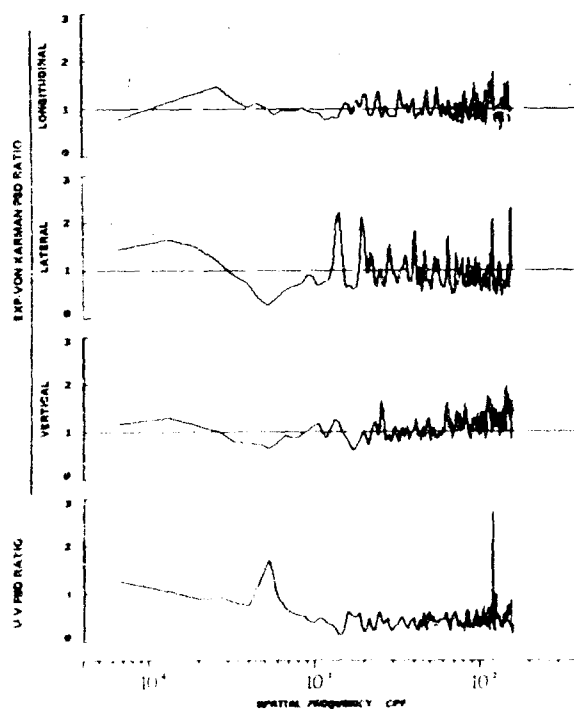
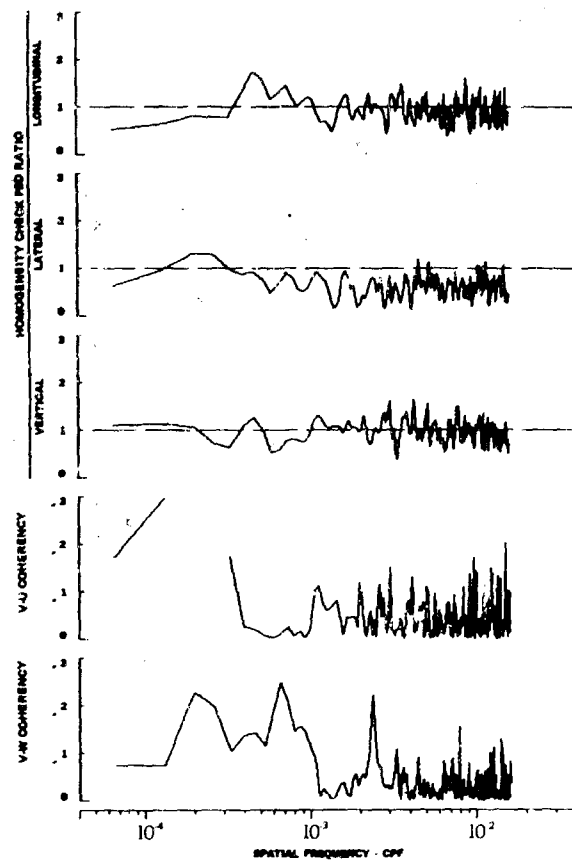
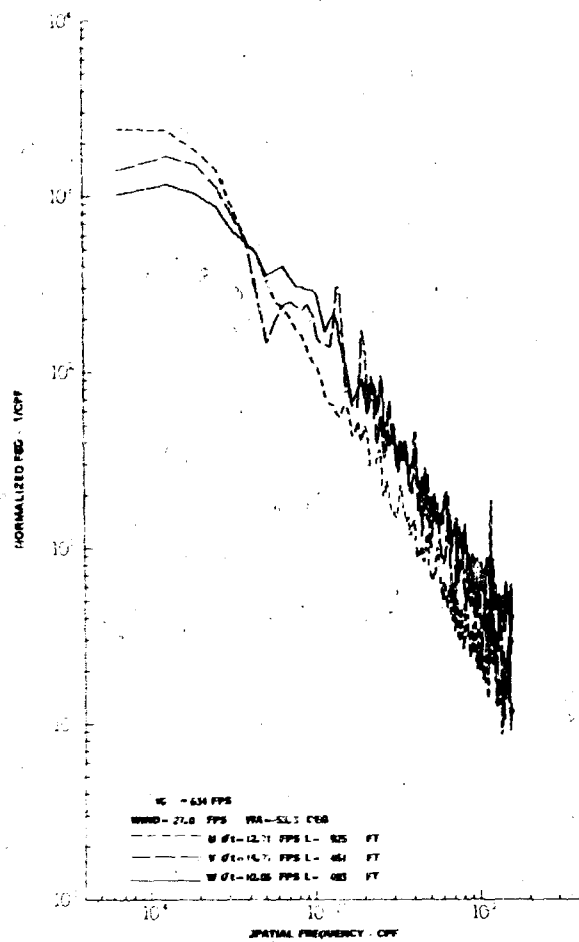
Turbulence Spectra Data For Test 210, Leg 4, Category 124343



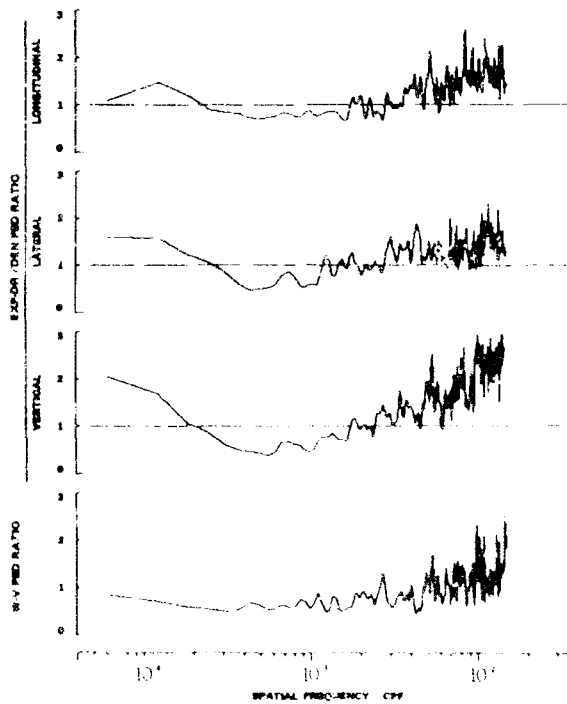
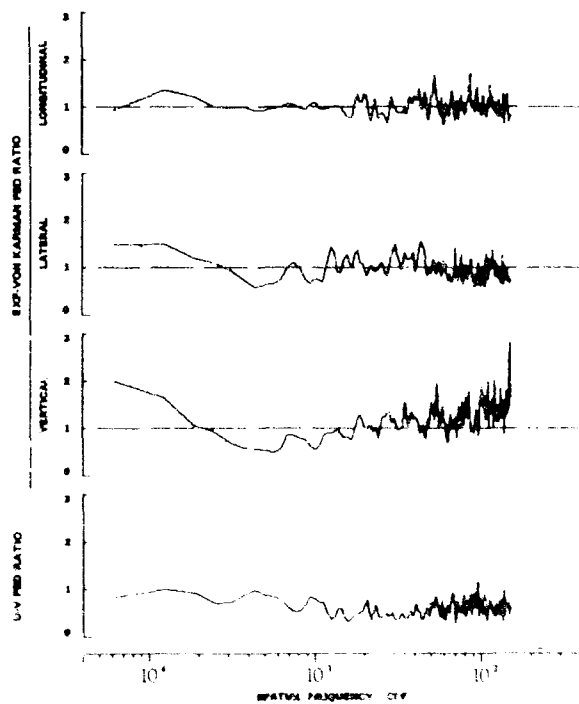
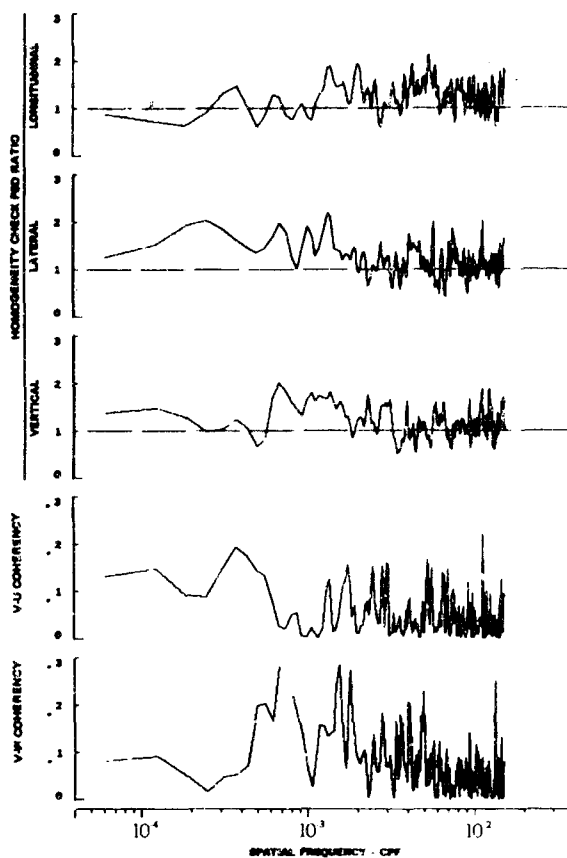
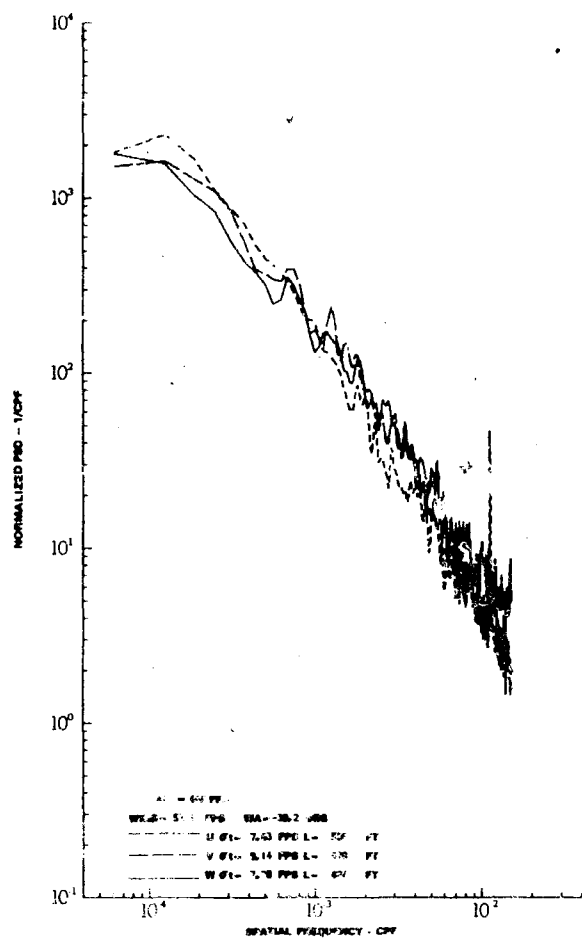


Turbulence Spectra Data For Test 210, Leg 6, Category 124343

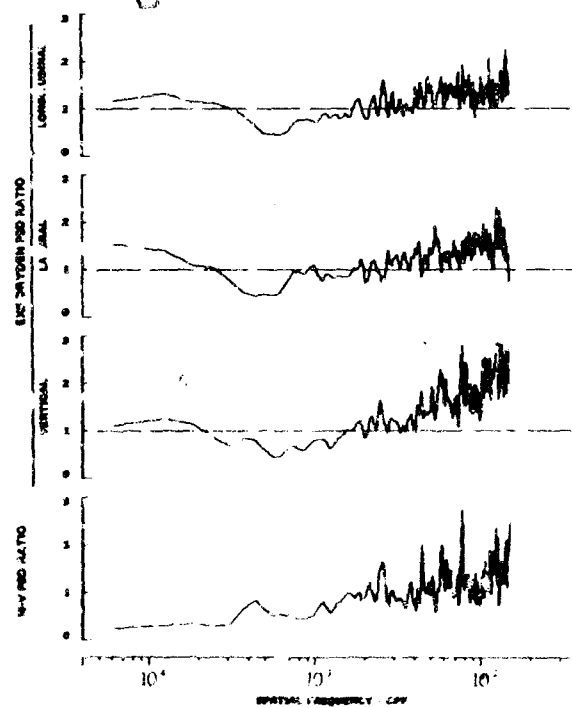
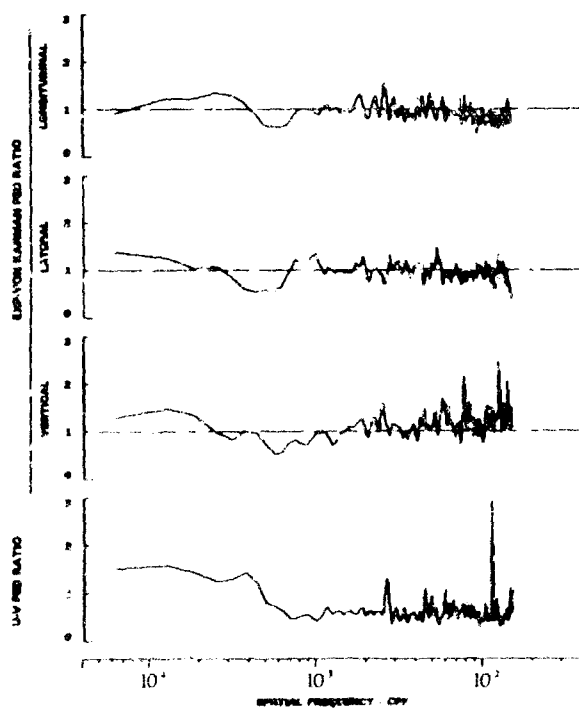
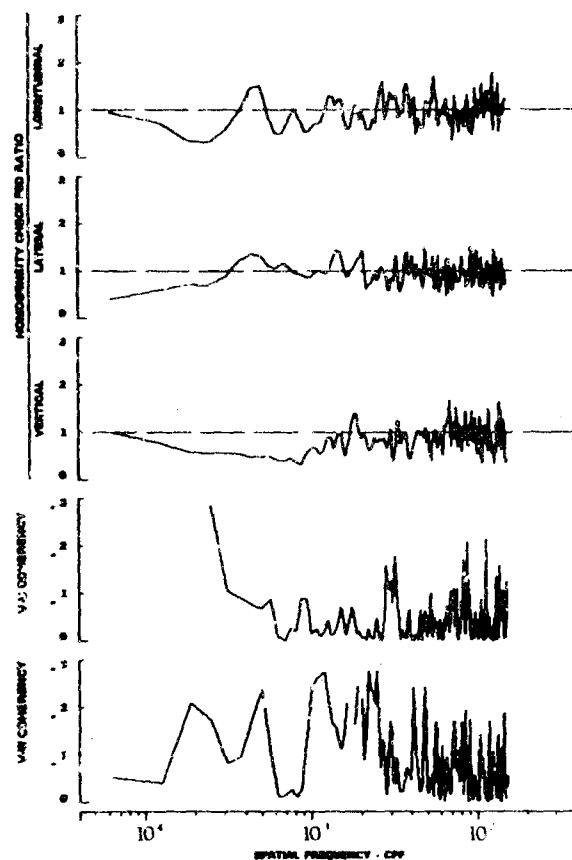
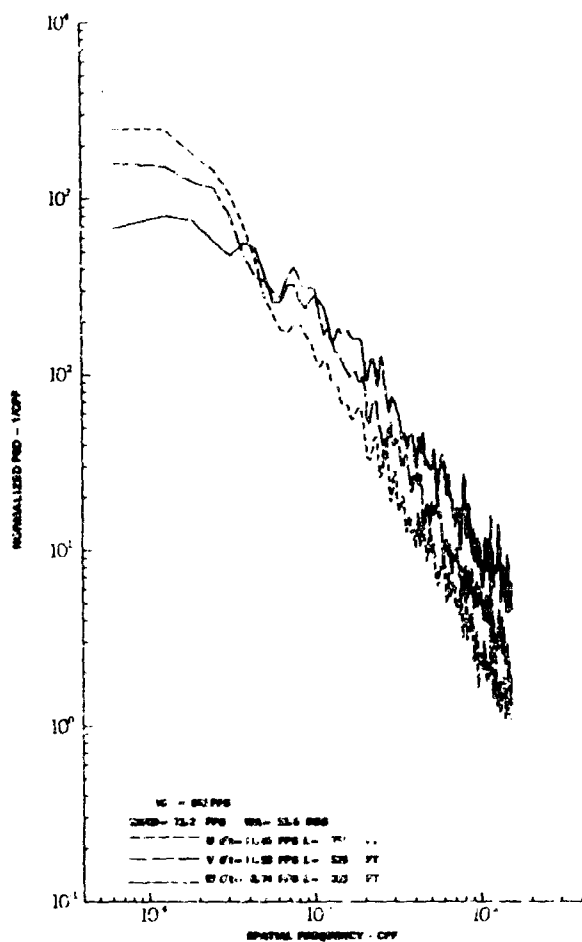




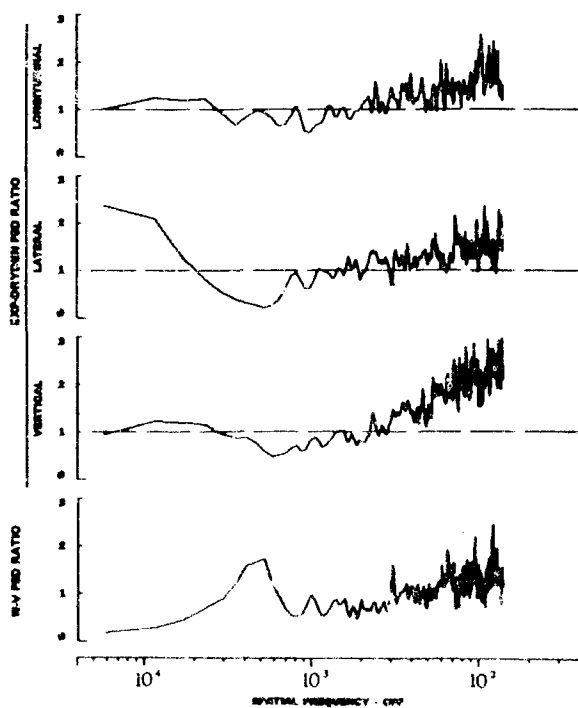
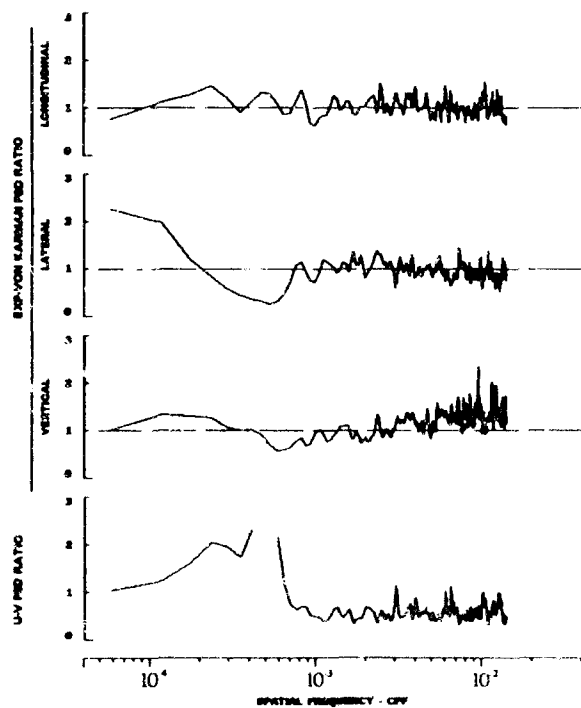
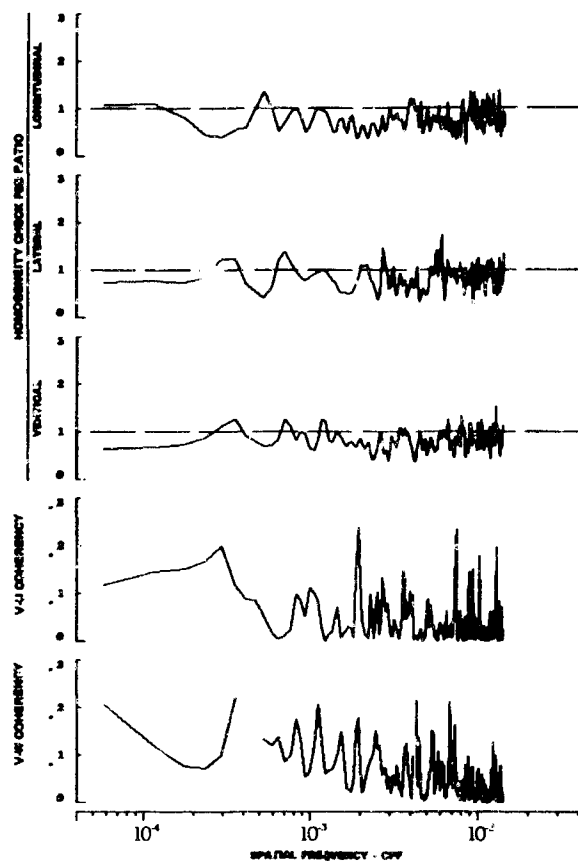
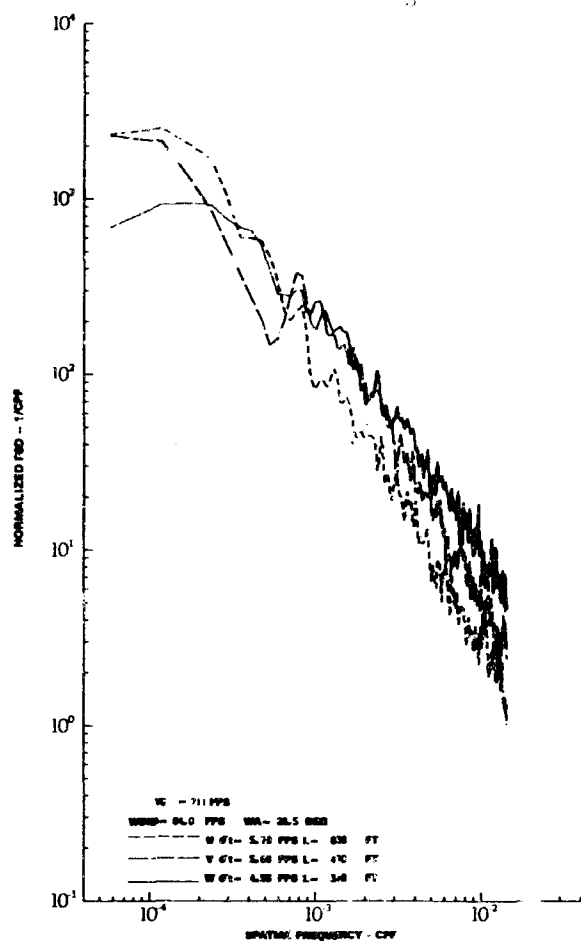
Turbulence Spectra Data for Test 211, Leg 5, Category 312143



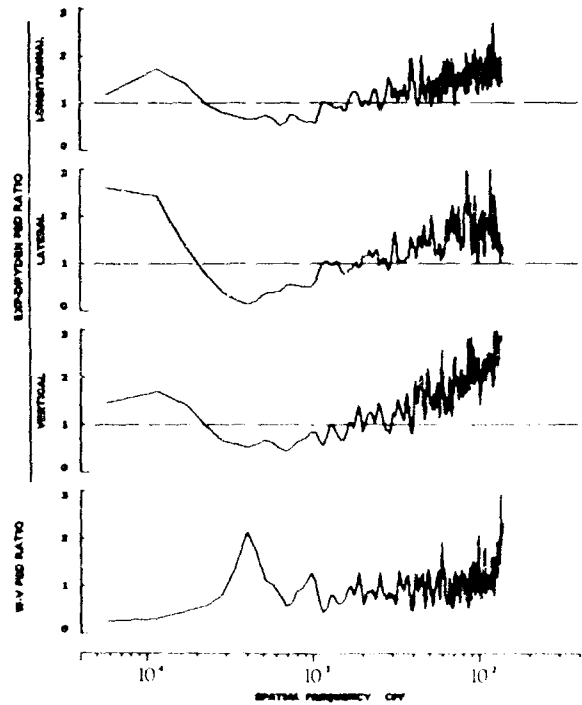
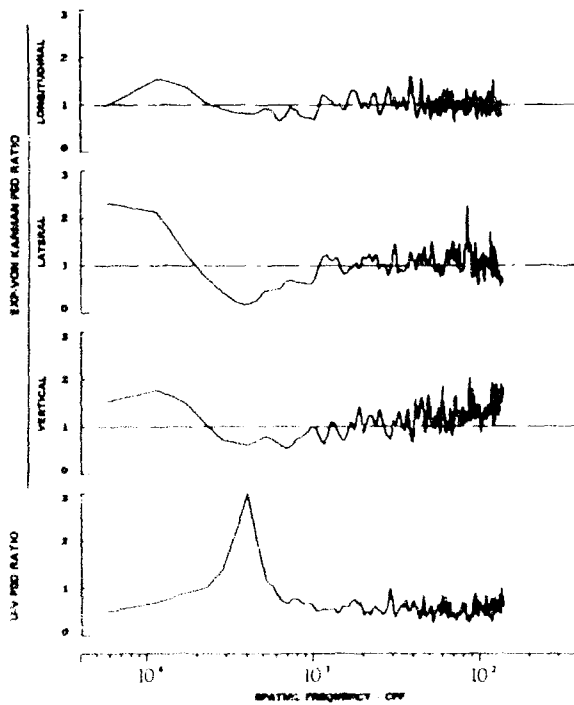
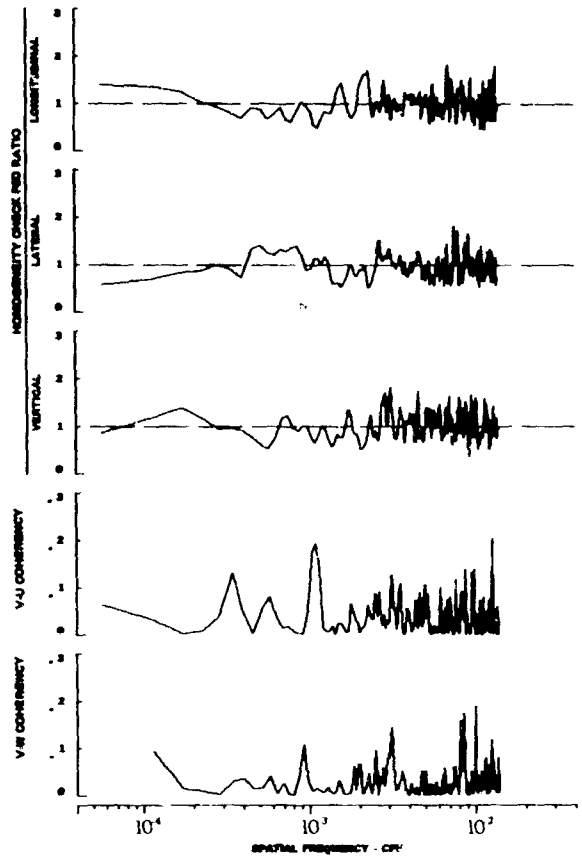
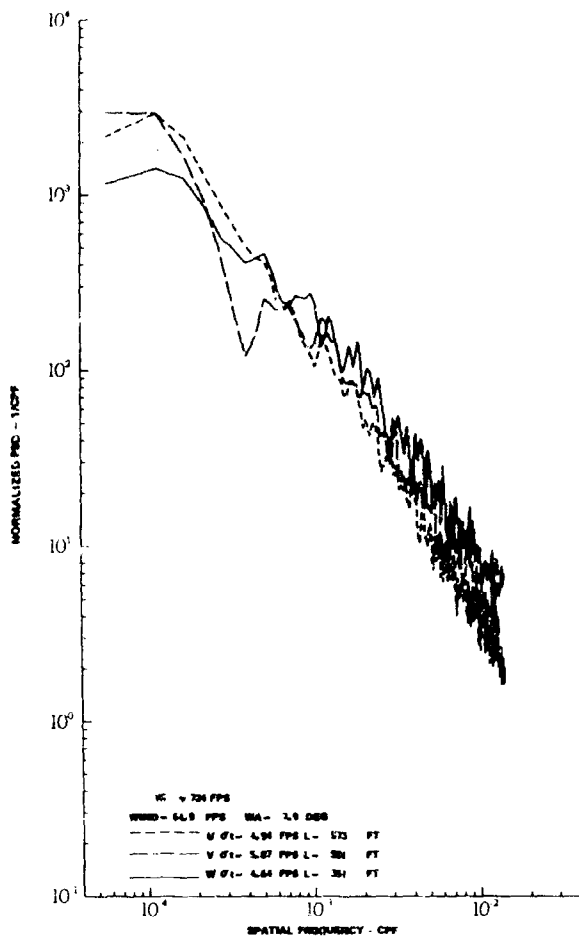
Turbulence Spectra Data for Test 212, Leg 4, Category 113243



Turbulence Spectra Data For Test 212, Leg 6, Category 114243



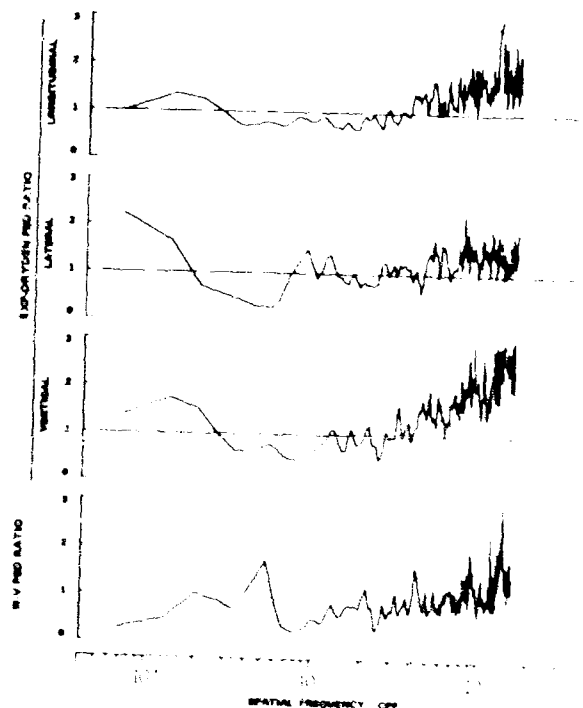
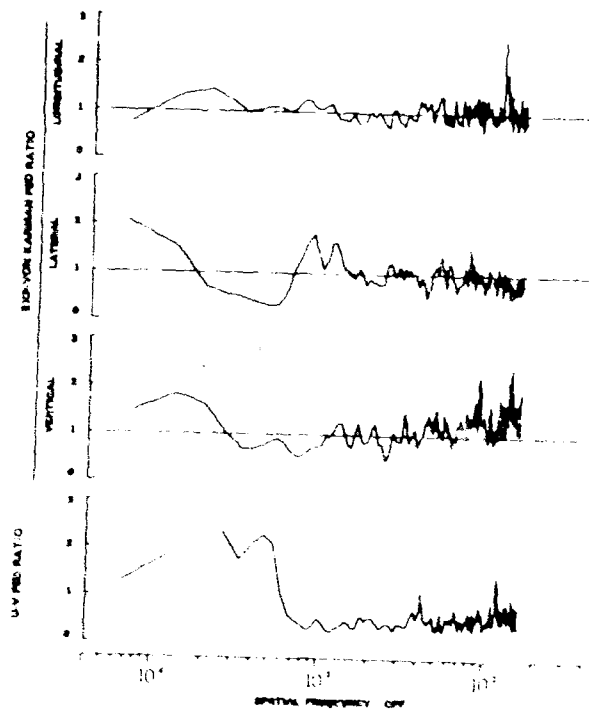
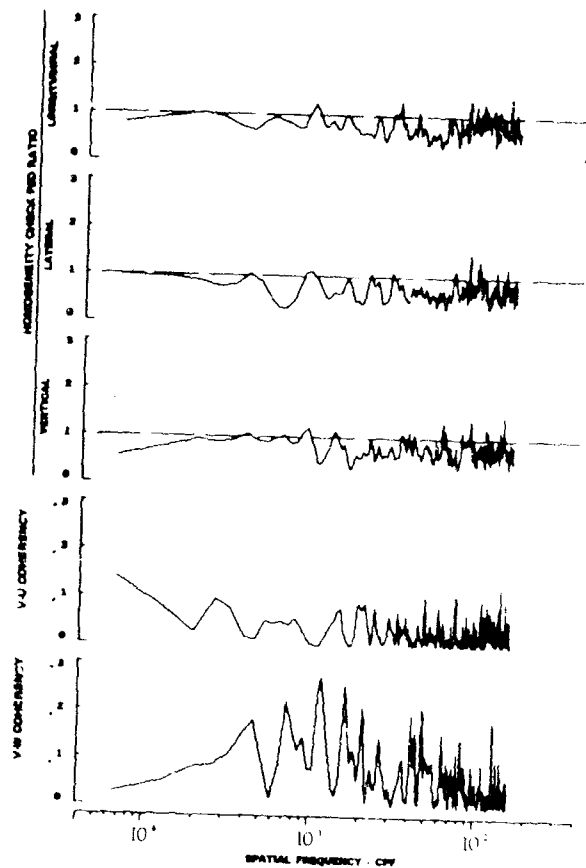
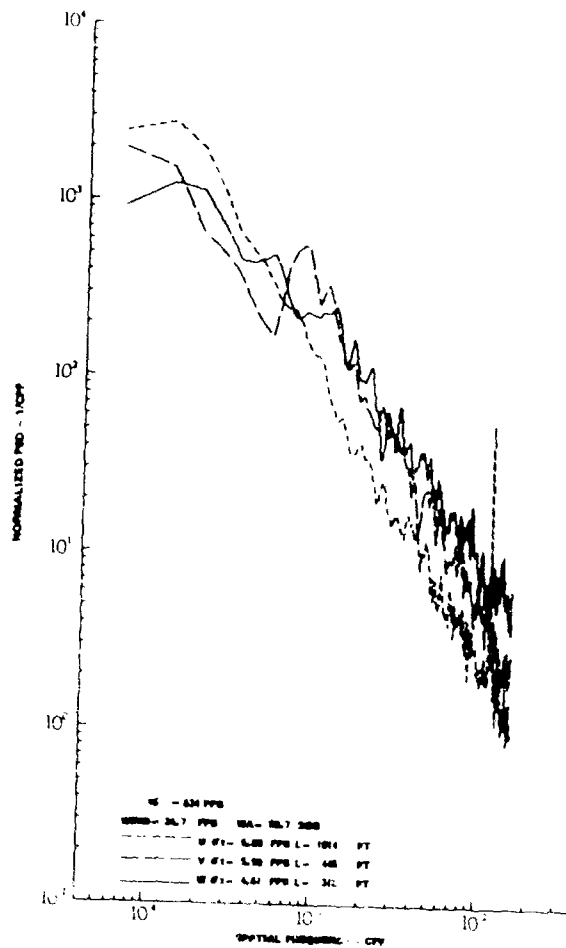
Turbulence Spectra Data For Test 212, Leg 8, Category 414243



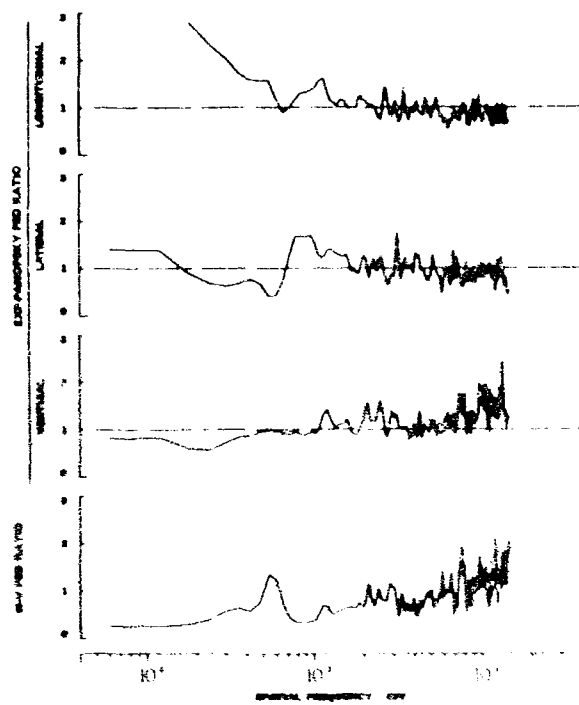
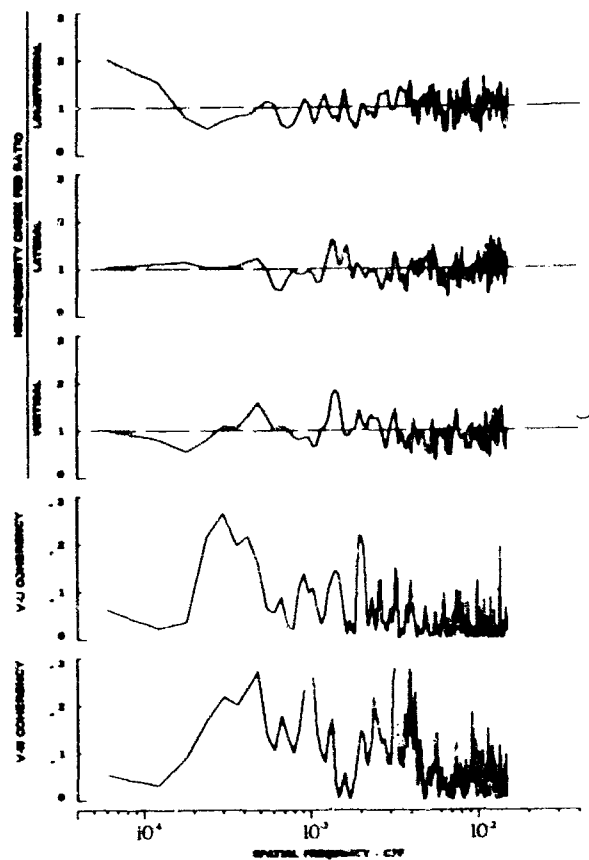
Turbulence Spectra Data For Test 213, Leg 3, Category 113343



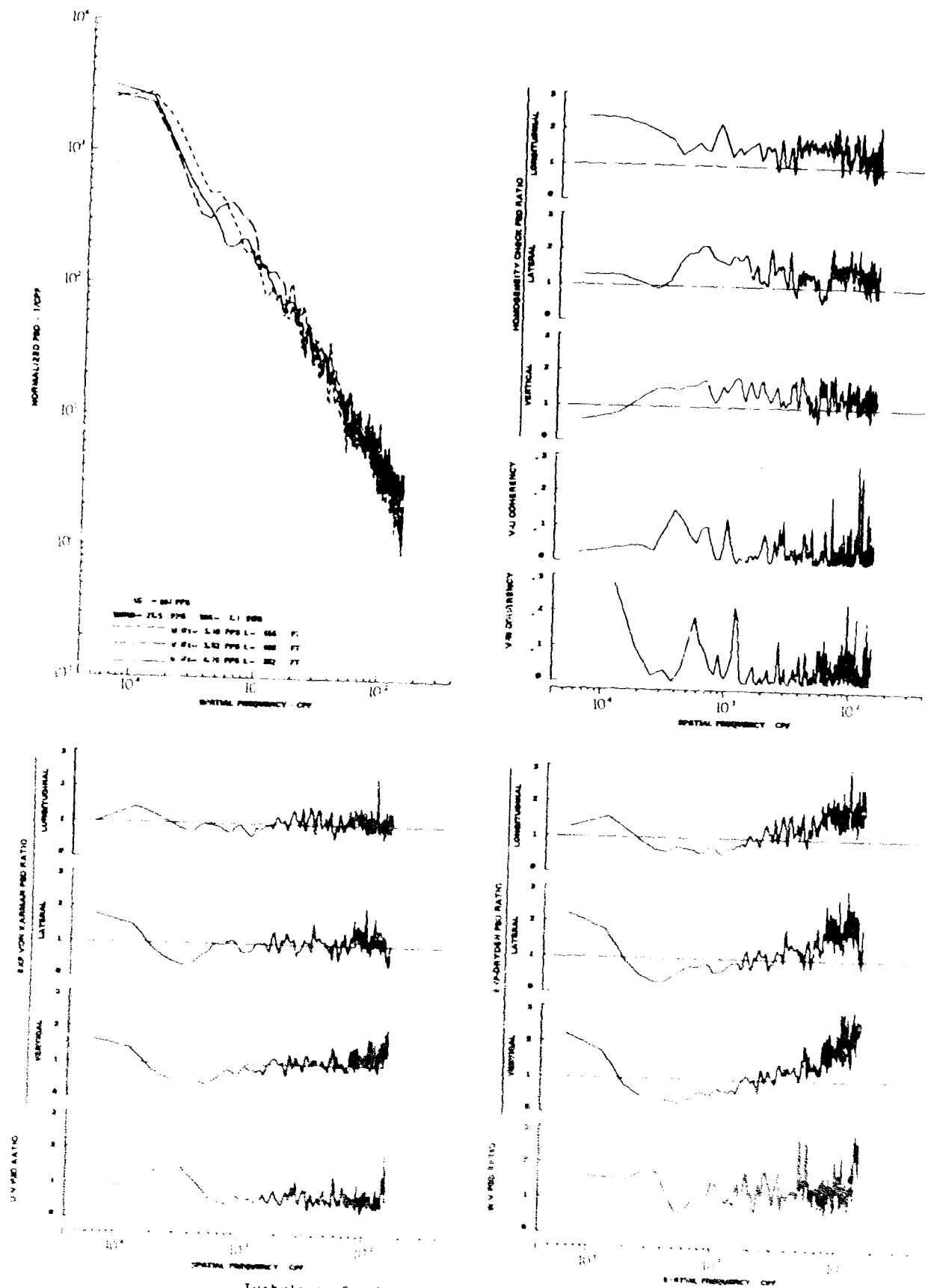




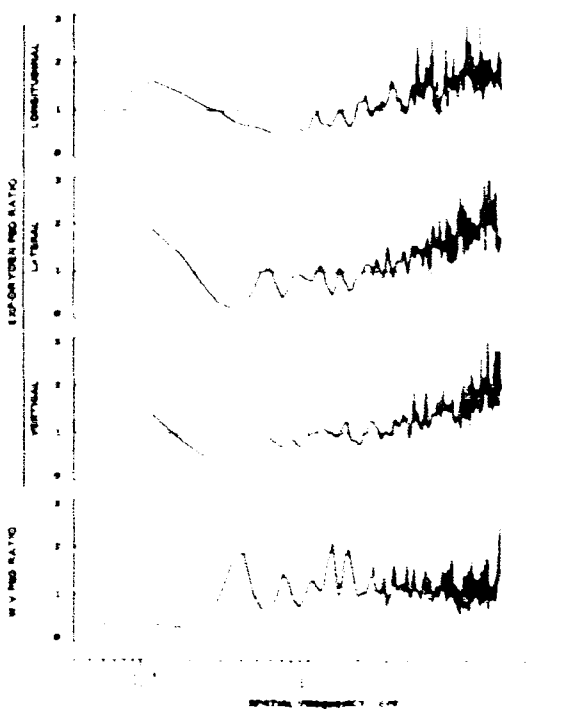
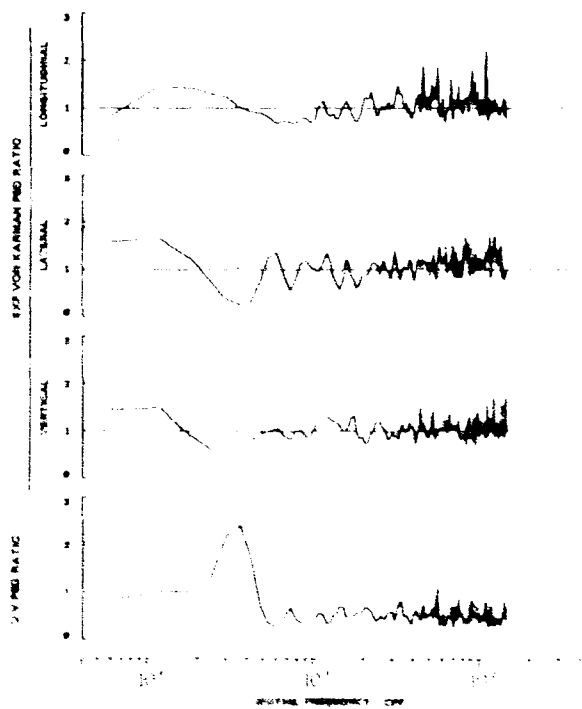
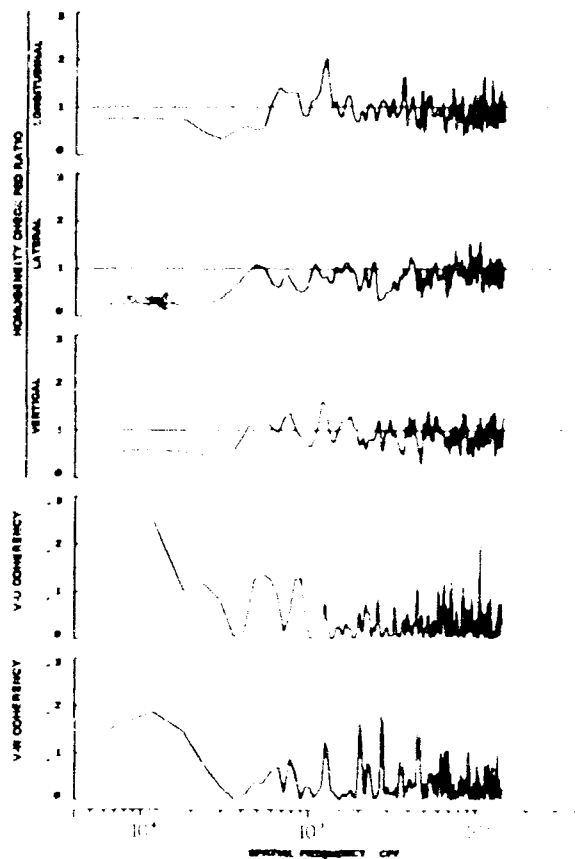
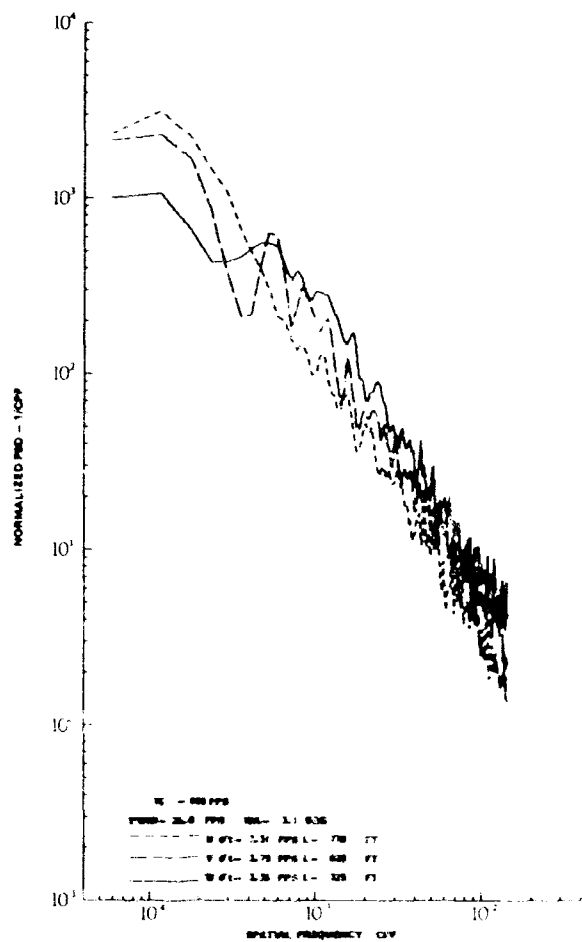
Turbulence Spectra Data For Test 213, Leg 7, Category 113343



Turbulence Spectra Data For Test 213, Log 8, Category 413343



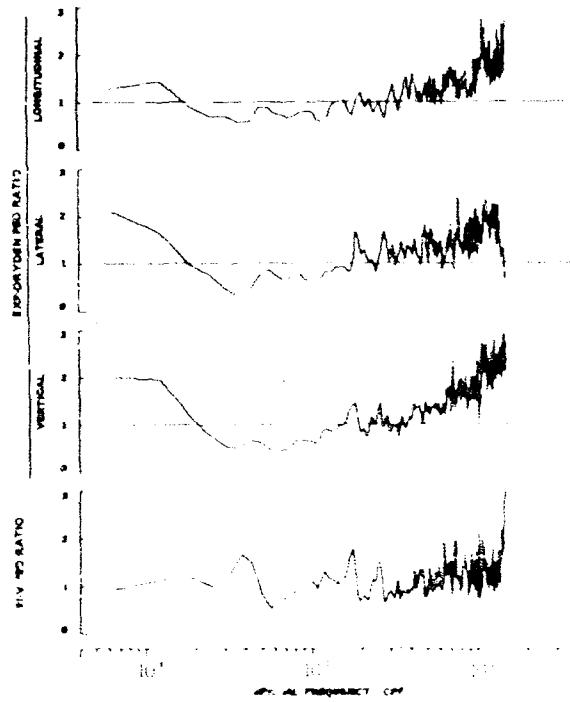
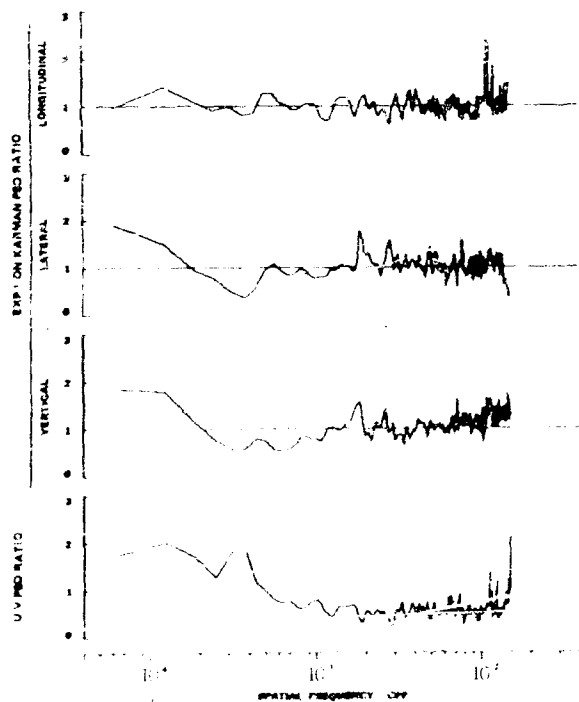
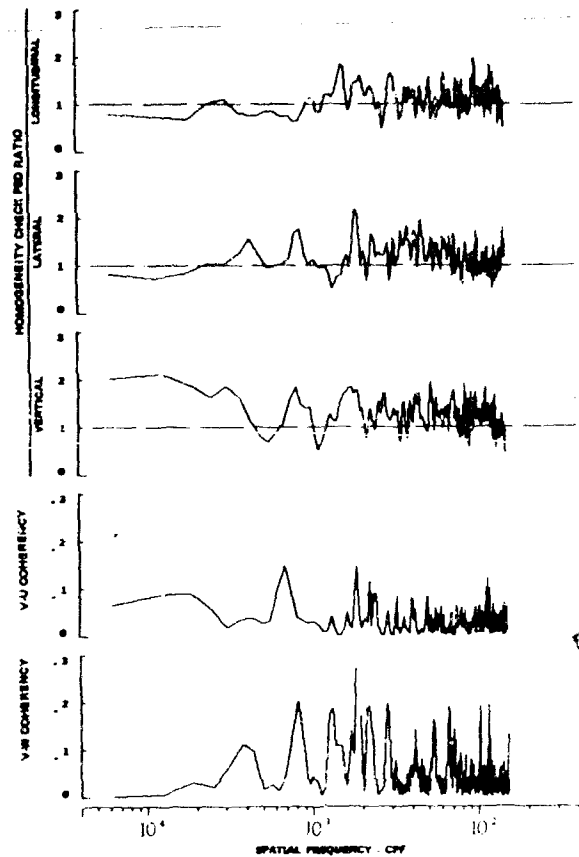
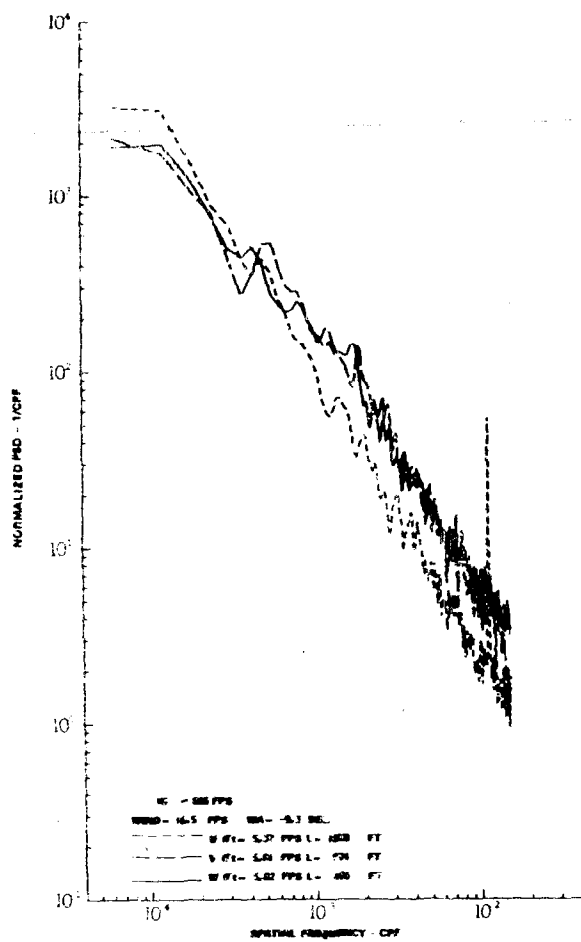
Turbulence Spectra Data For Test 215, Leg 1, Category 112243



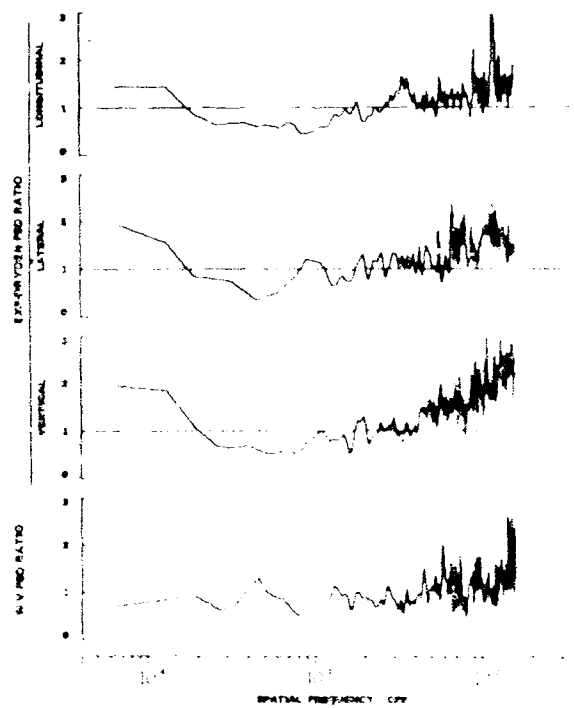
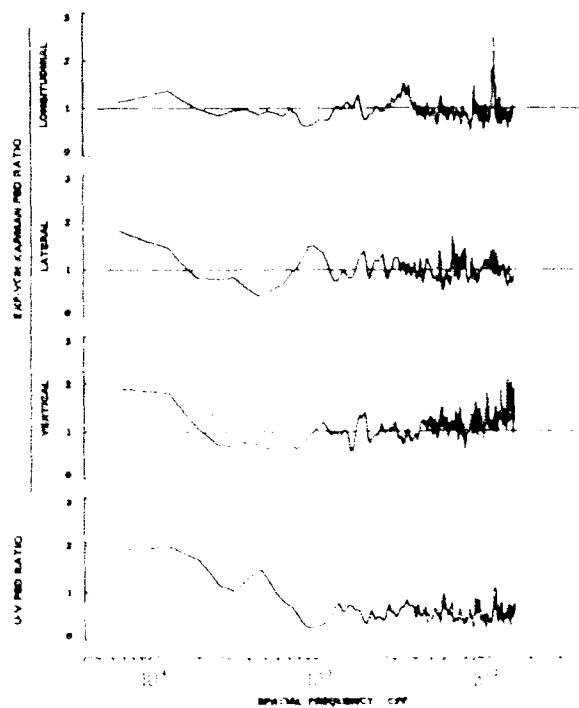
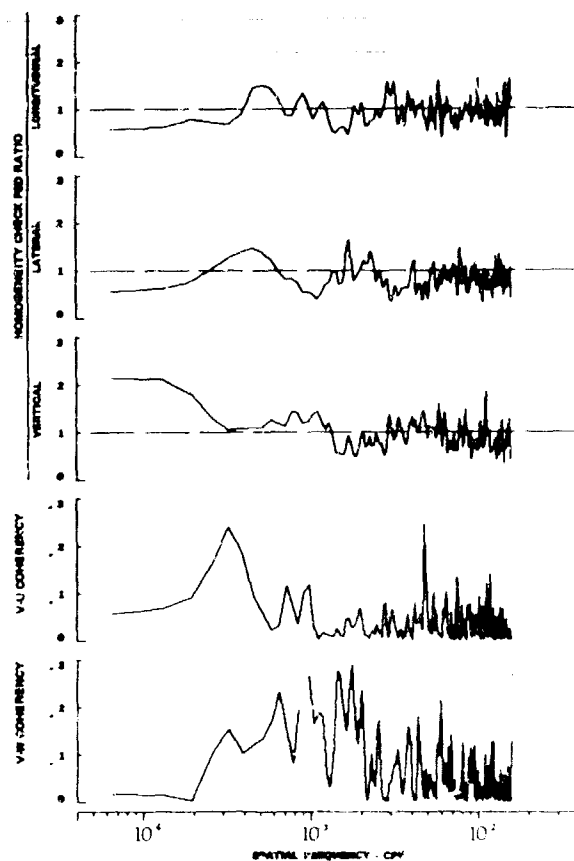
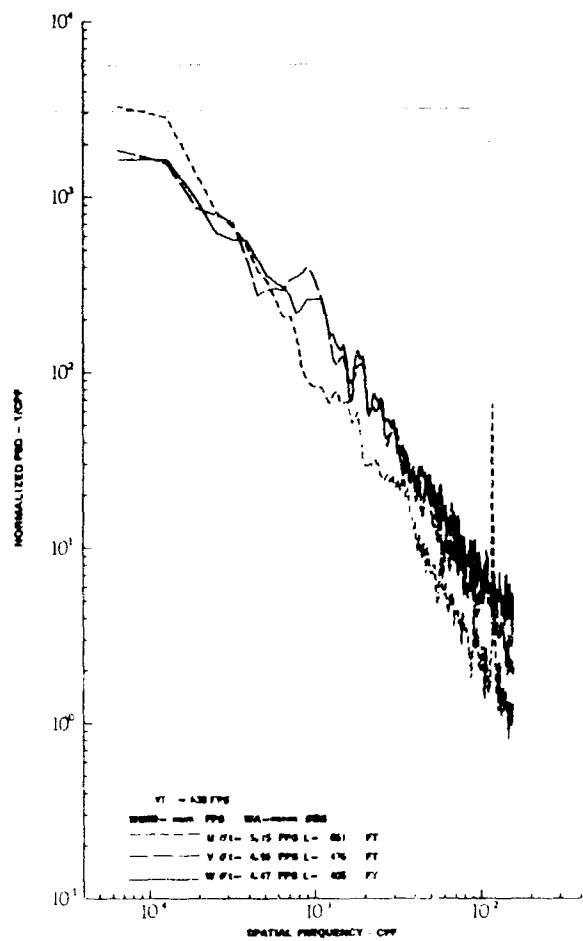
Turbulence Spectra Data For Test 215, Lee 3, Category 112243







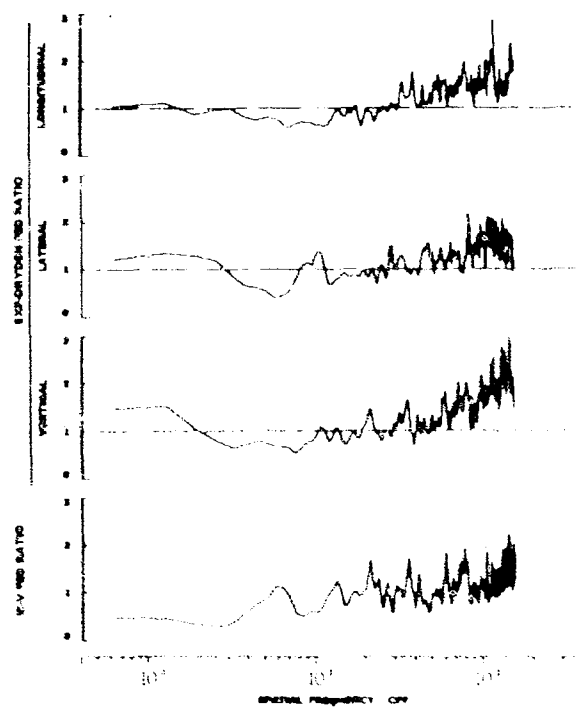
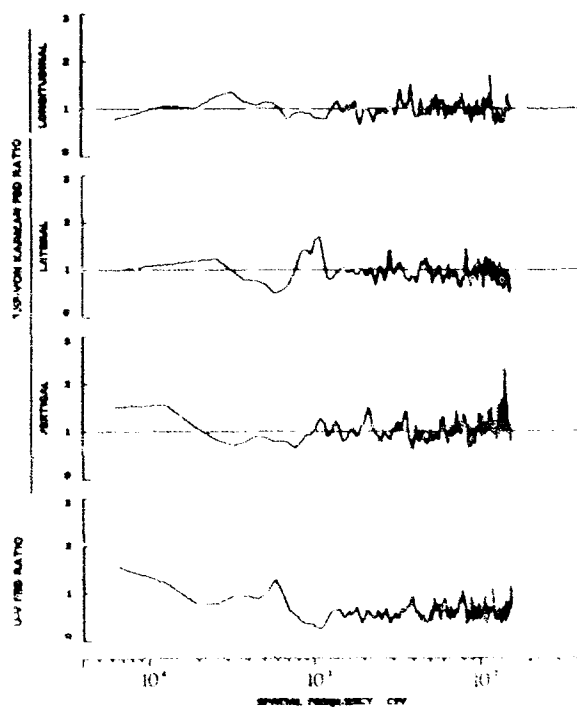
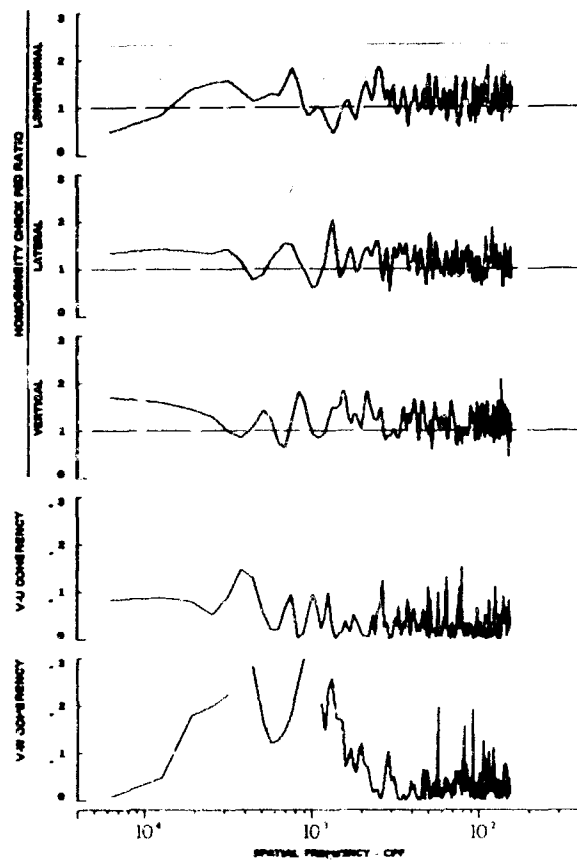
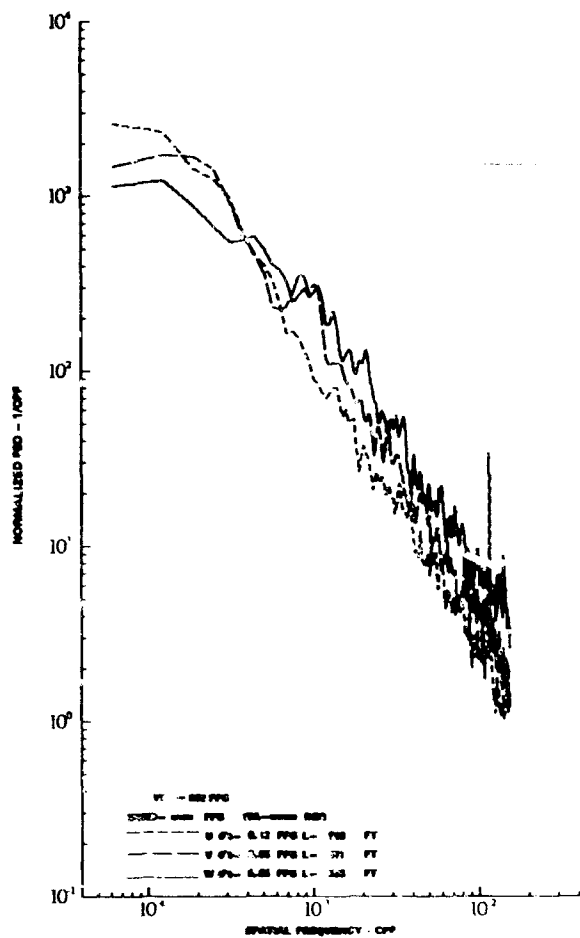
Turbulence Spectra Data For Test 216, Leg 2, Category 112343



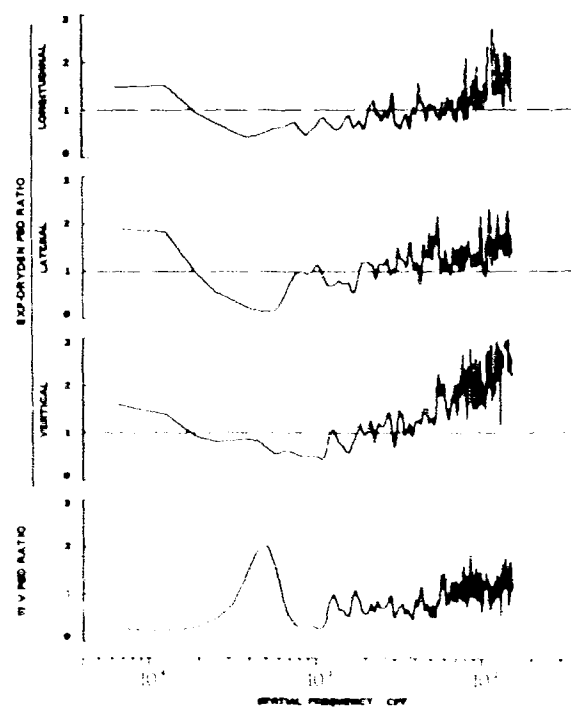
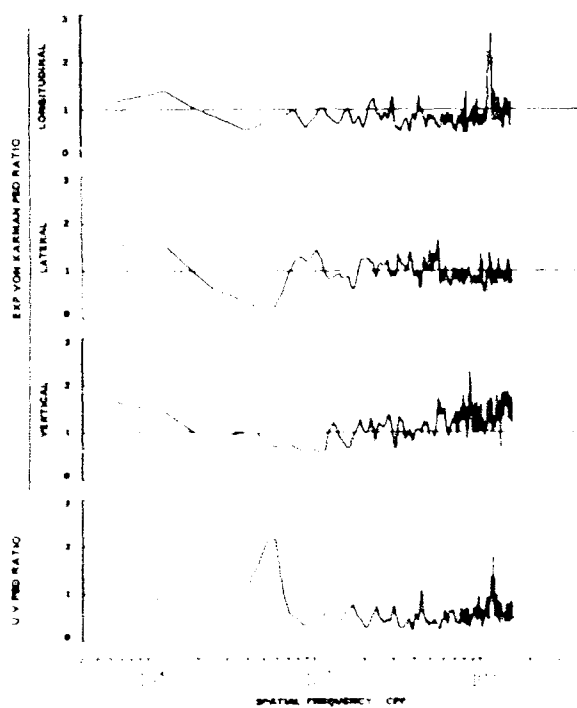
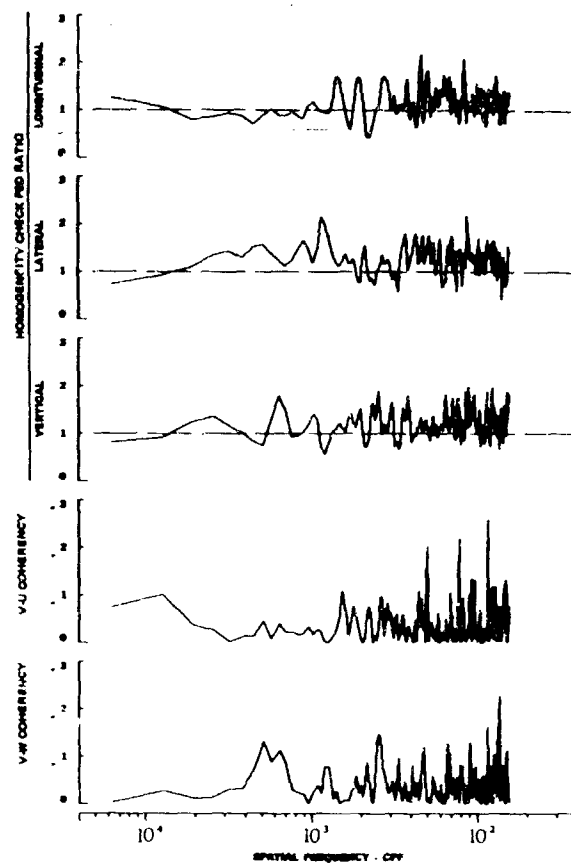
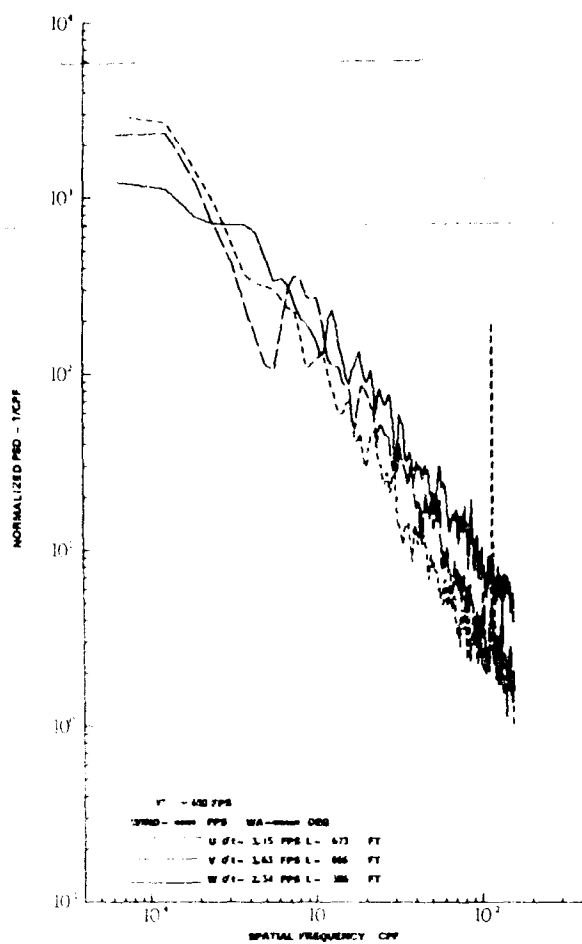
Turbulence Spectra Data For Test 216, Leg 4, Category 114343



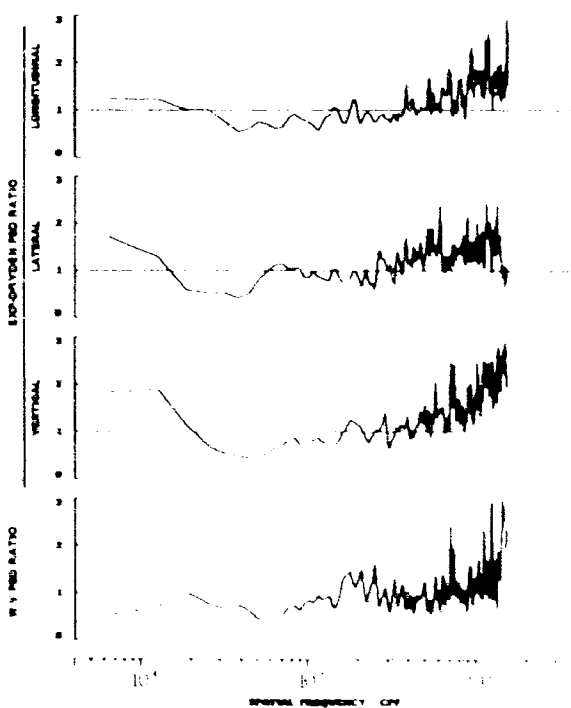
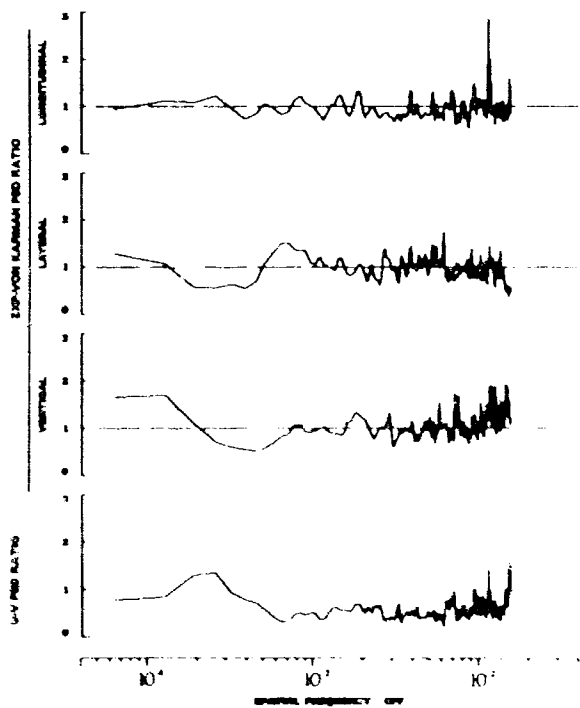
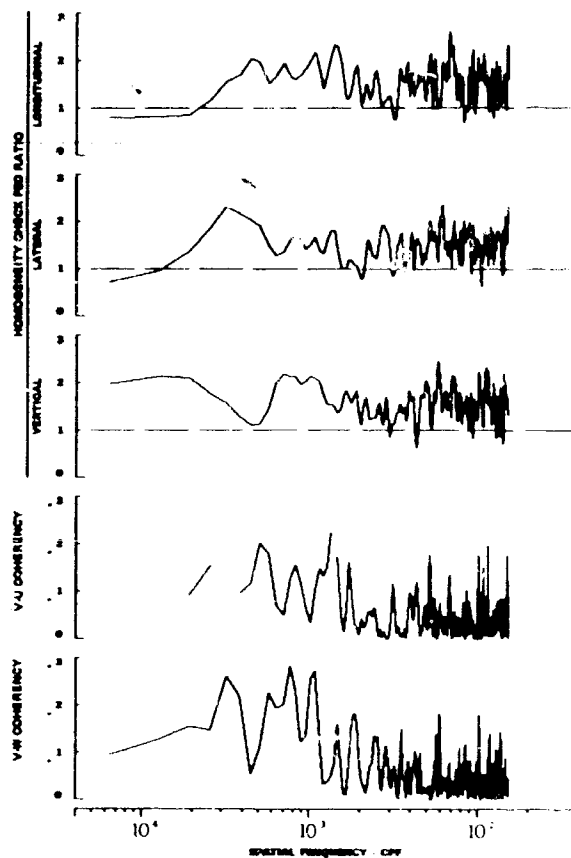
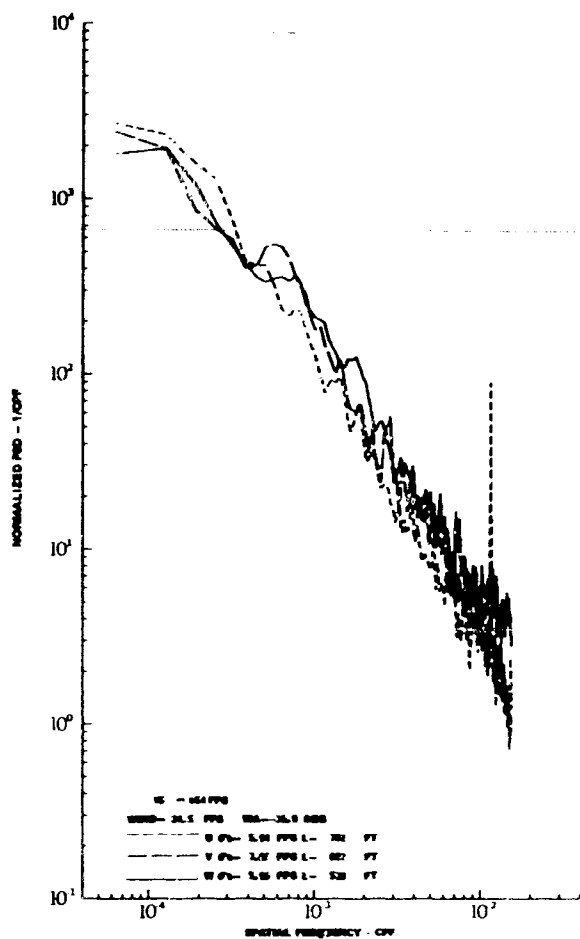




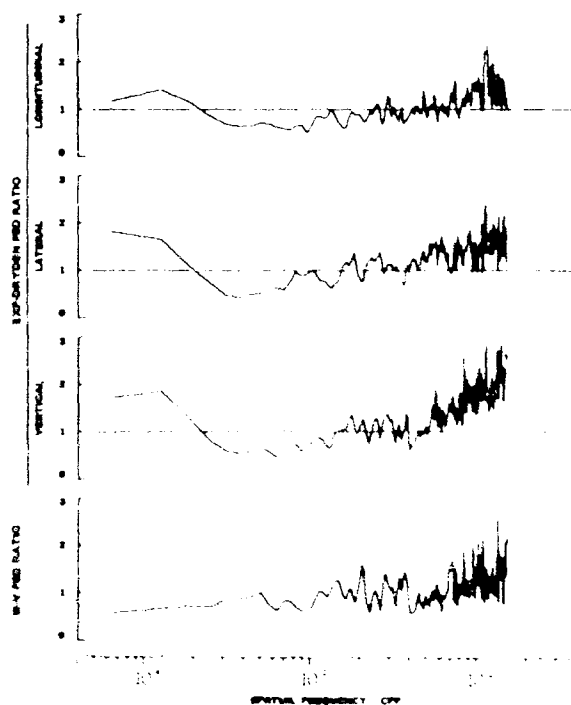
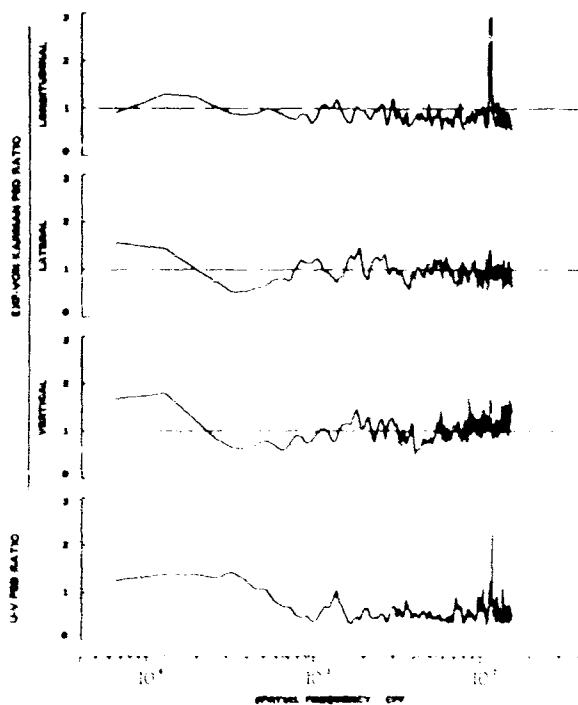
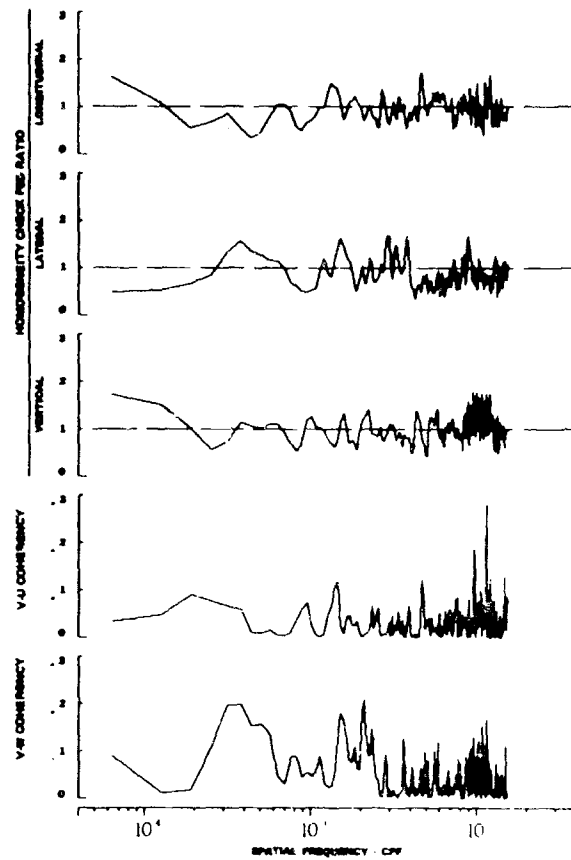
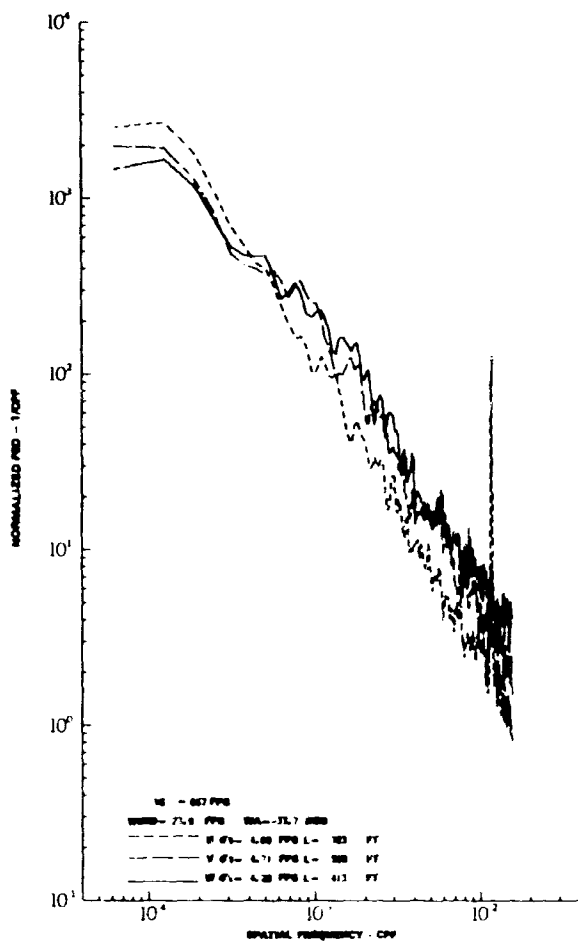
Turbulence Spectra Data For Test 217, Leg 5, Category 123113



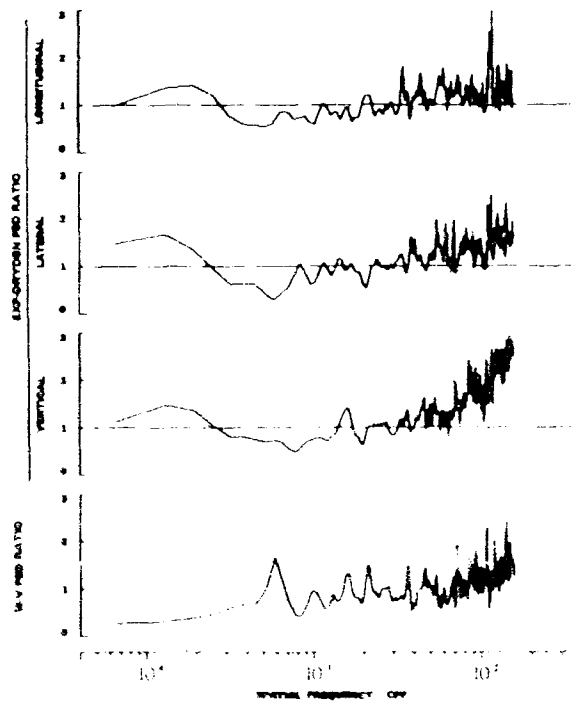
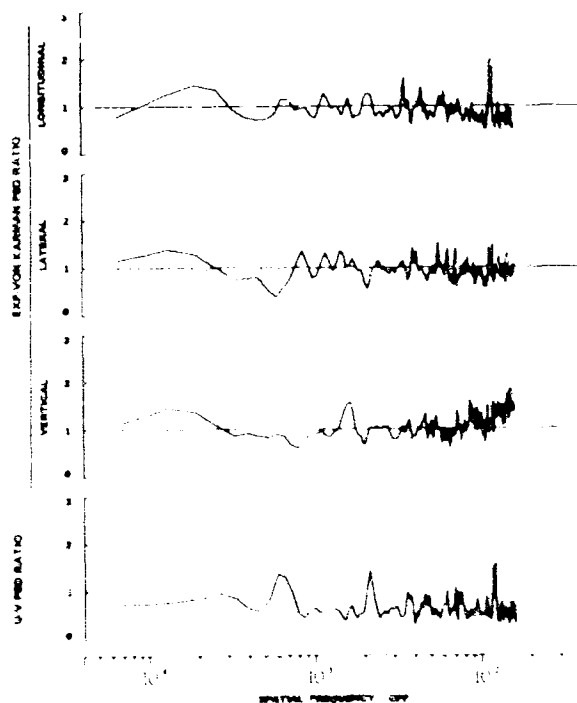
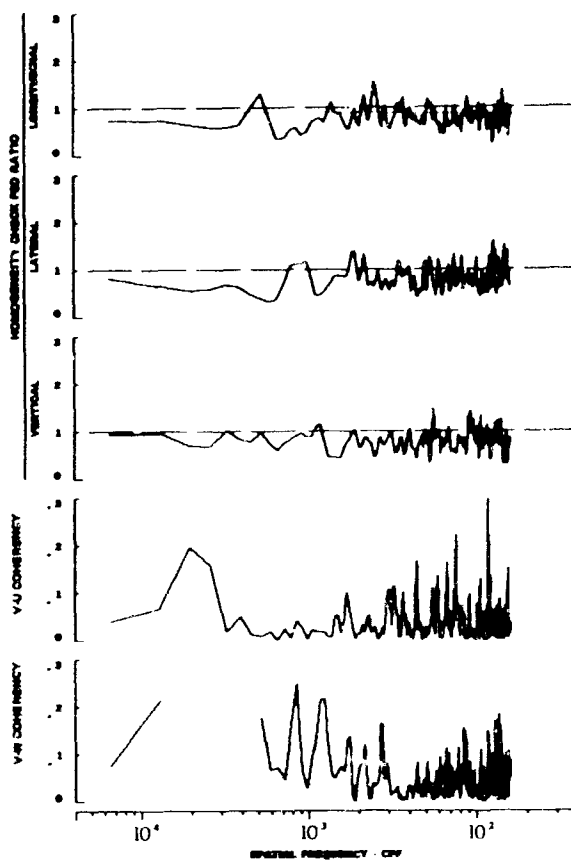
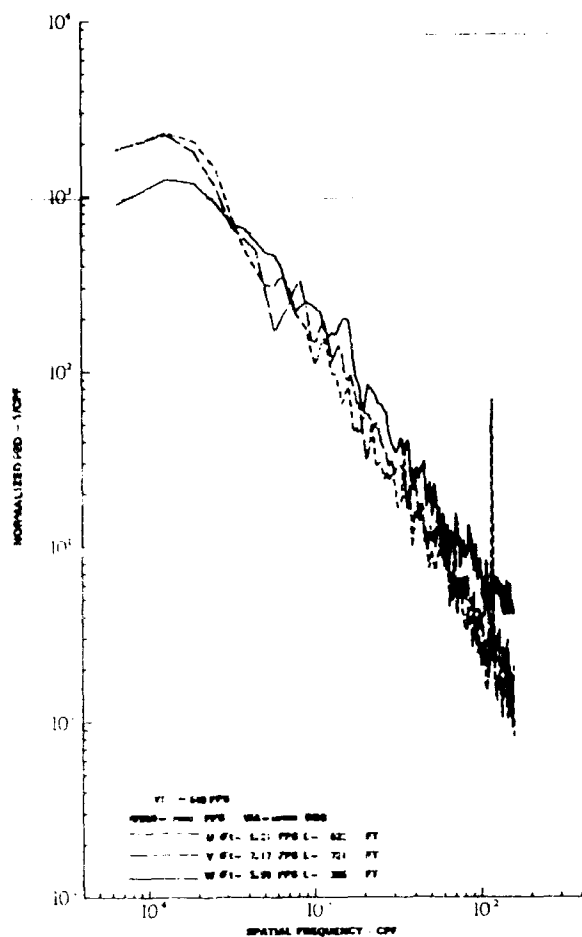
Turbulence Spectra Data For Test 217, Leg 7, Category 121113



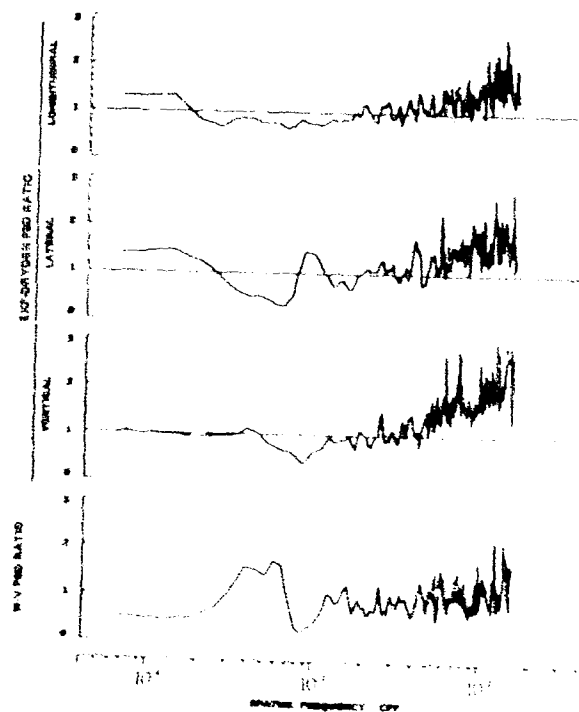
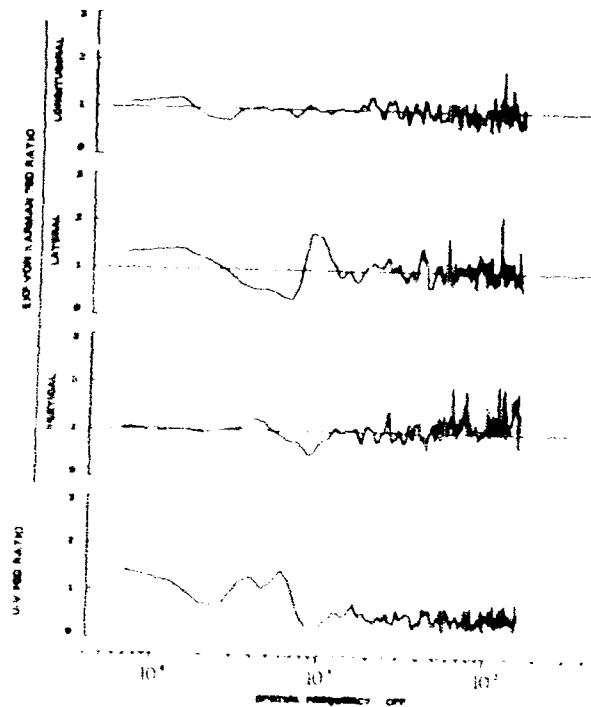
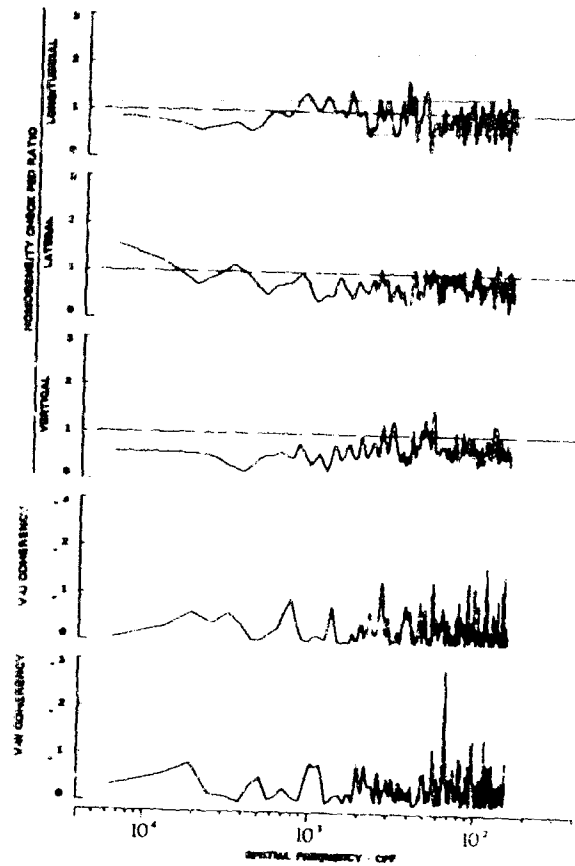
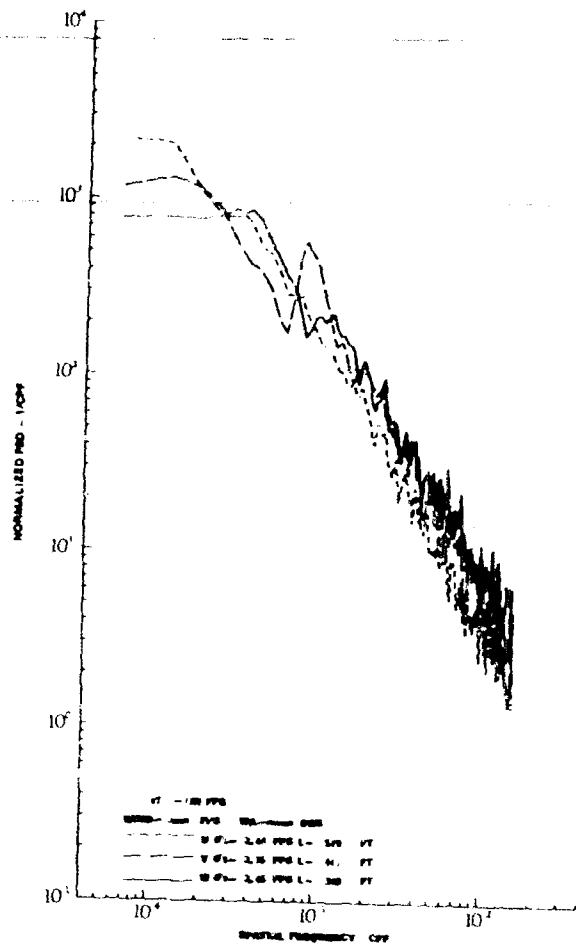
Turbulence Spectra Data For Test 218, Leg 2, Category 122213



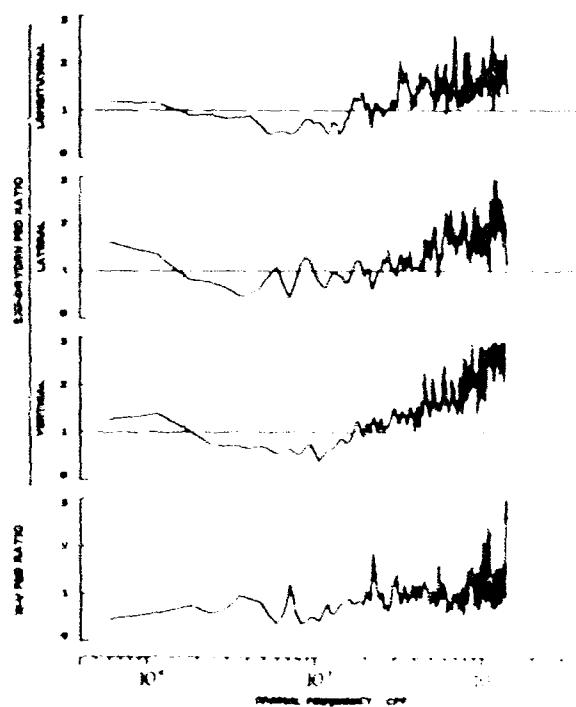
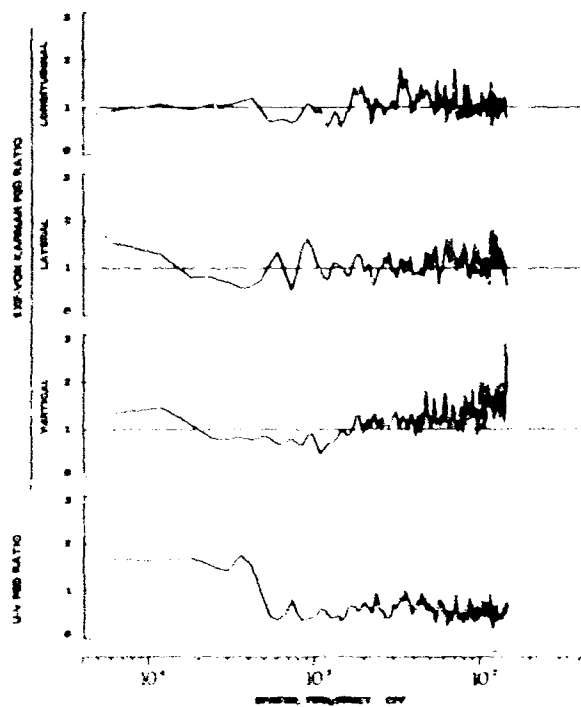
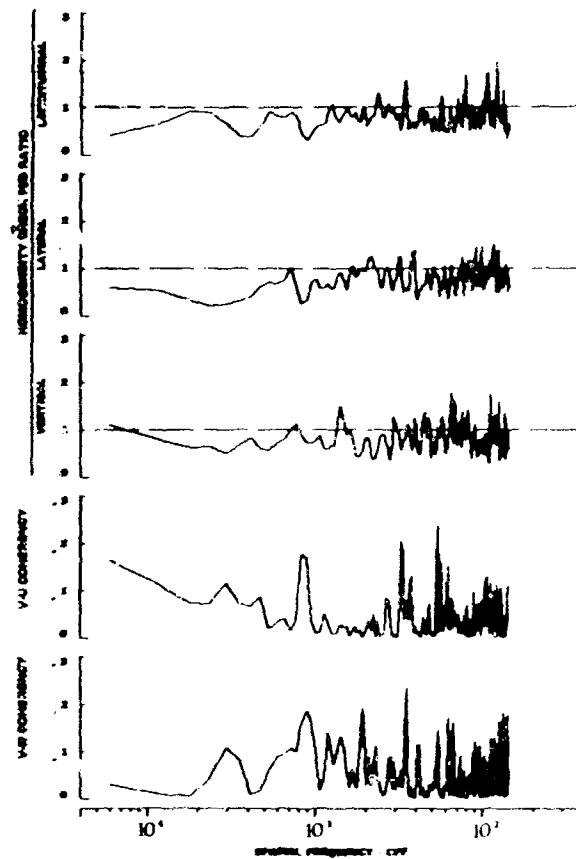
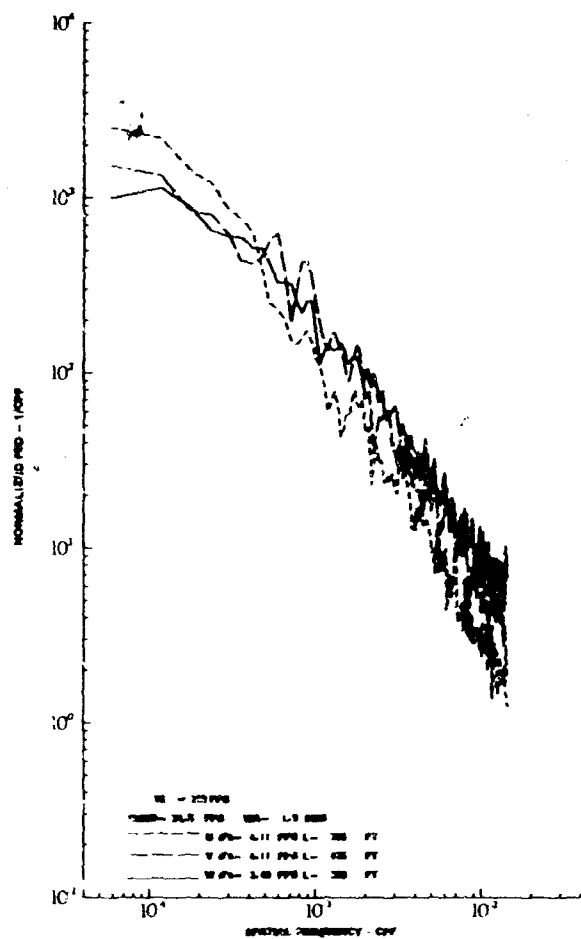
Turbulence Spectra Data For Test 218, Leg 4, Category 123213



Turbulence Spectra Data for Test 218, Leg 6, Category 123213

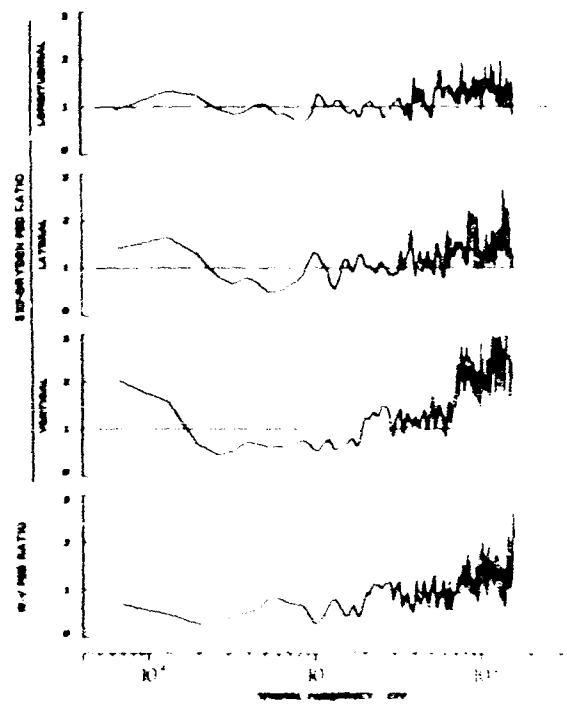
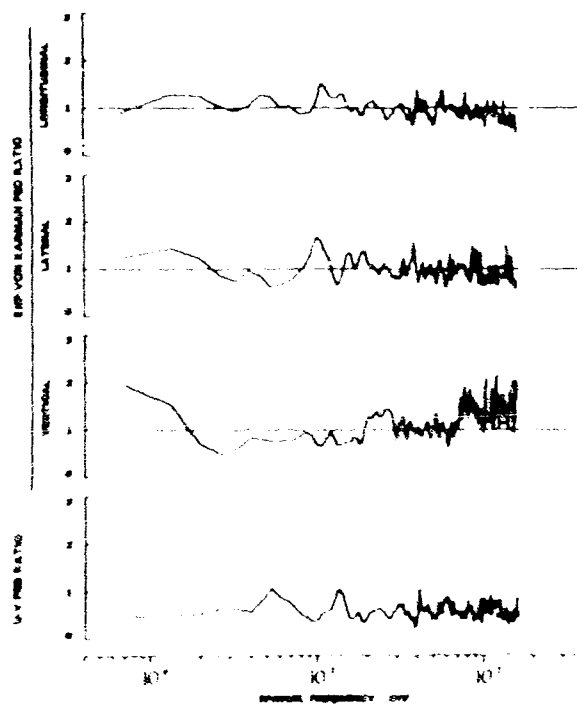
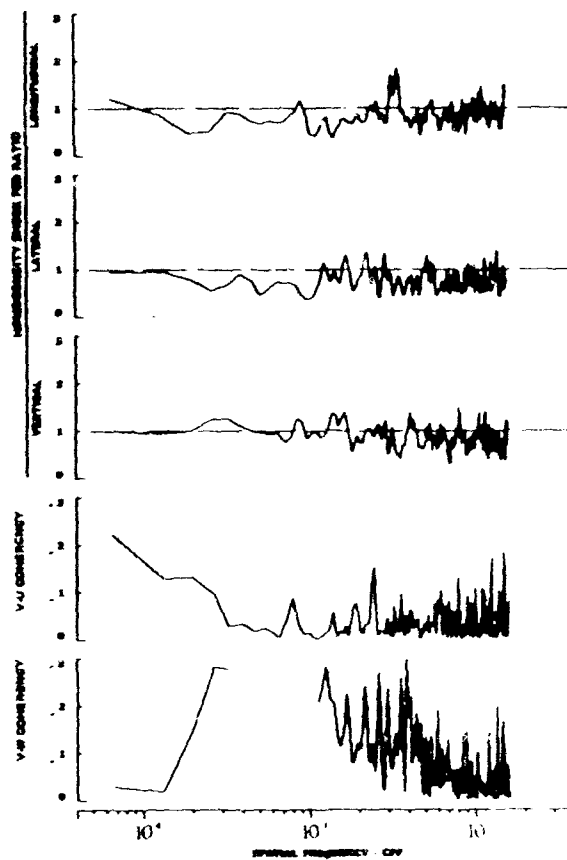
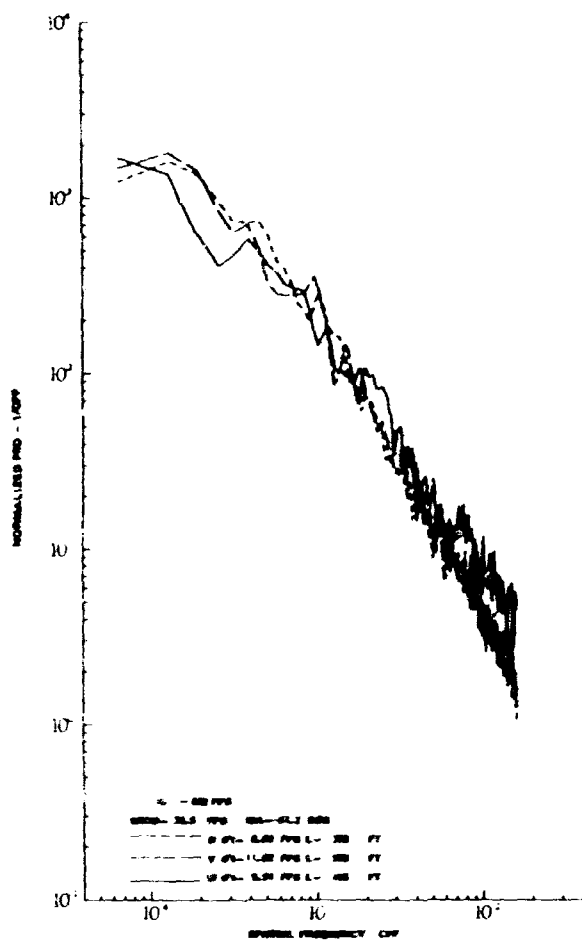


Turbulence Spectra Data For Test 218, Leg 8, Category 123213



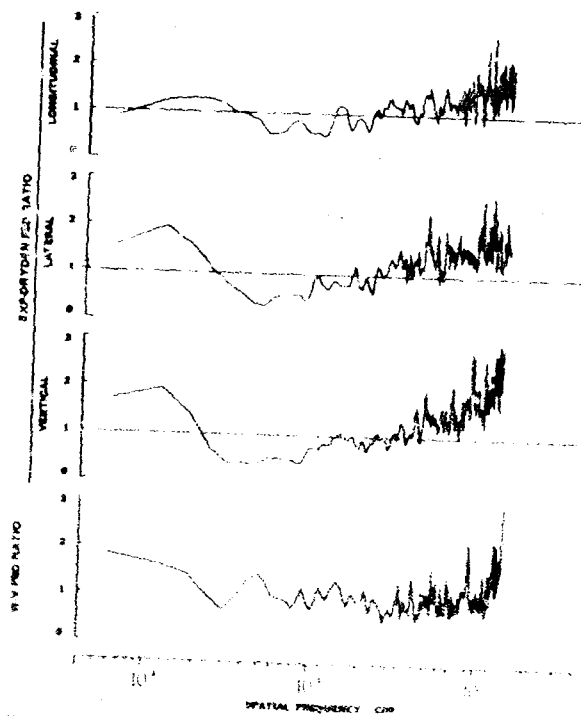
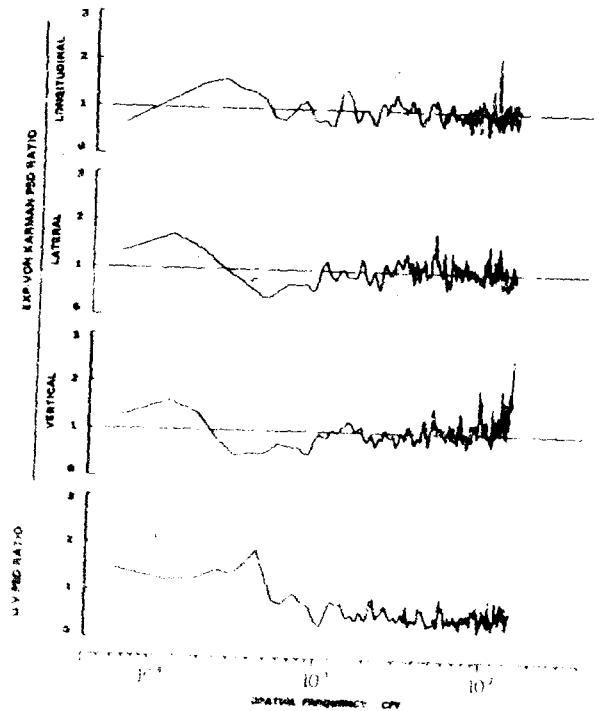
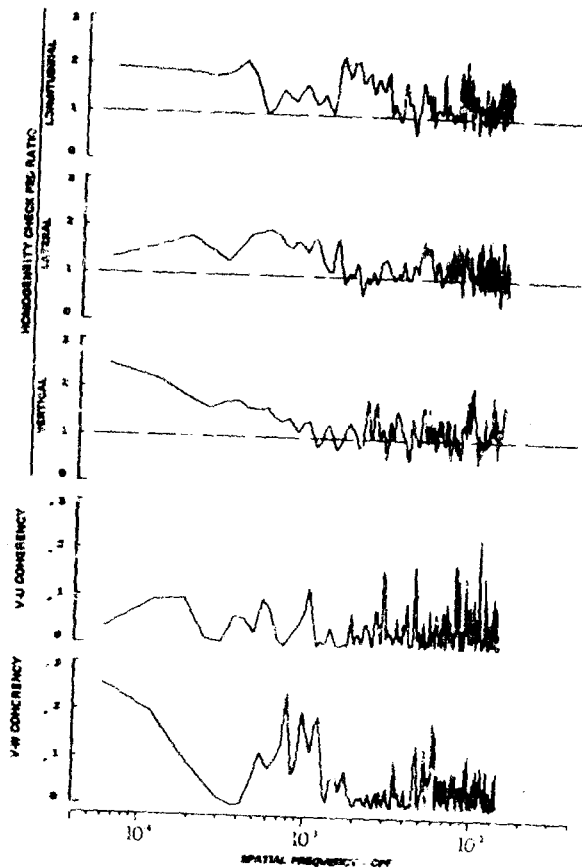
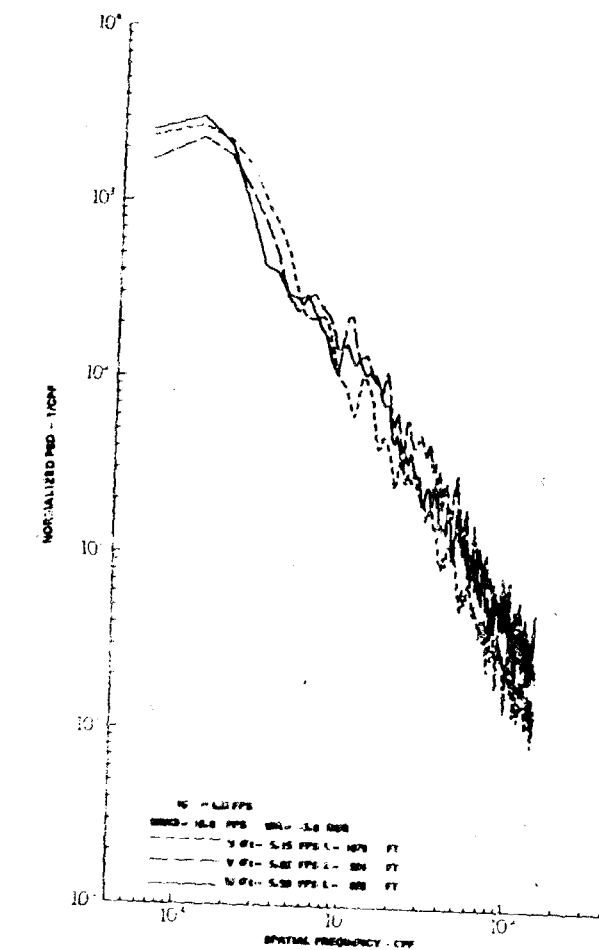
Turbulence Spectra Data For Test 219, Leg 3, Category 112213



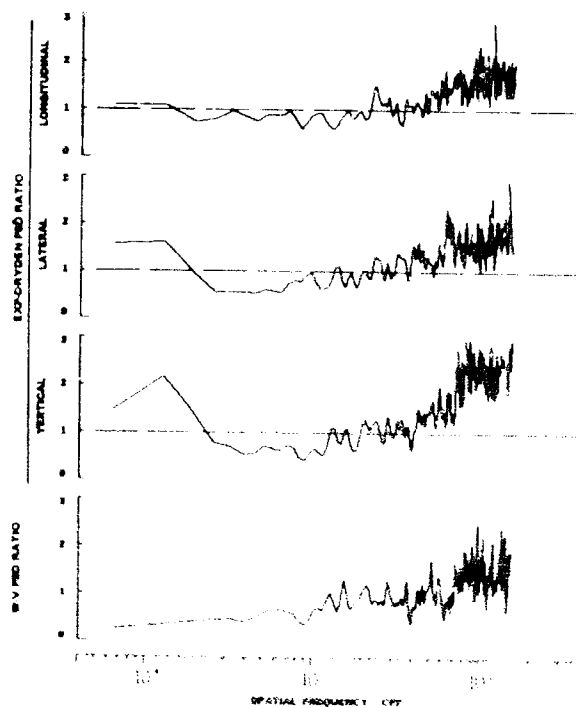
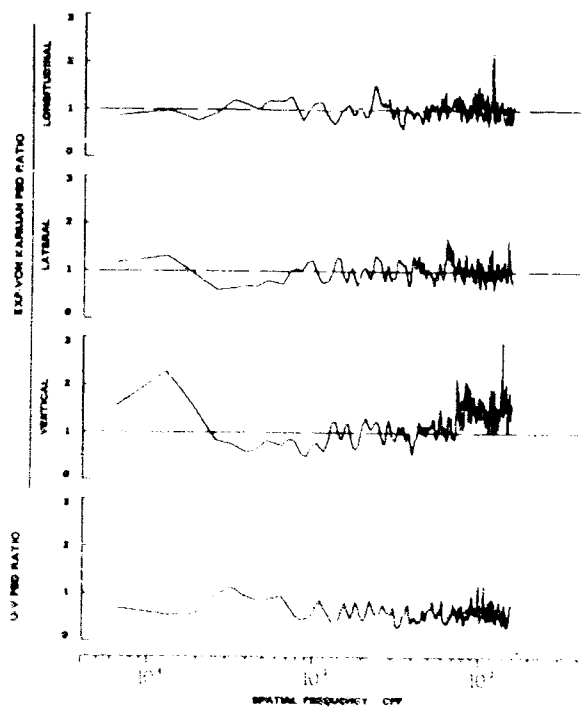
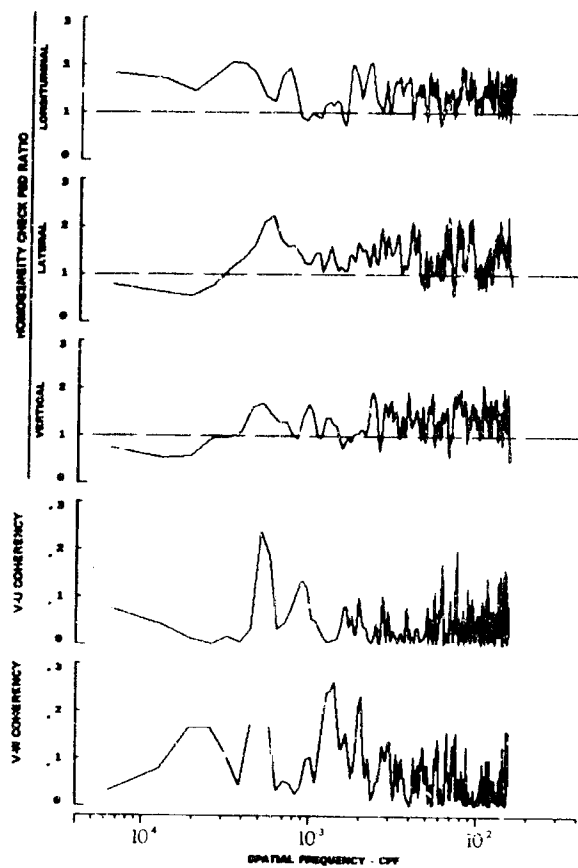
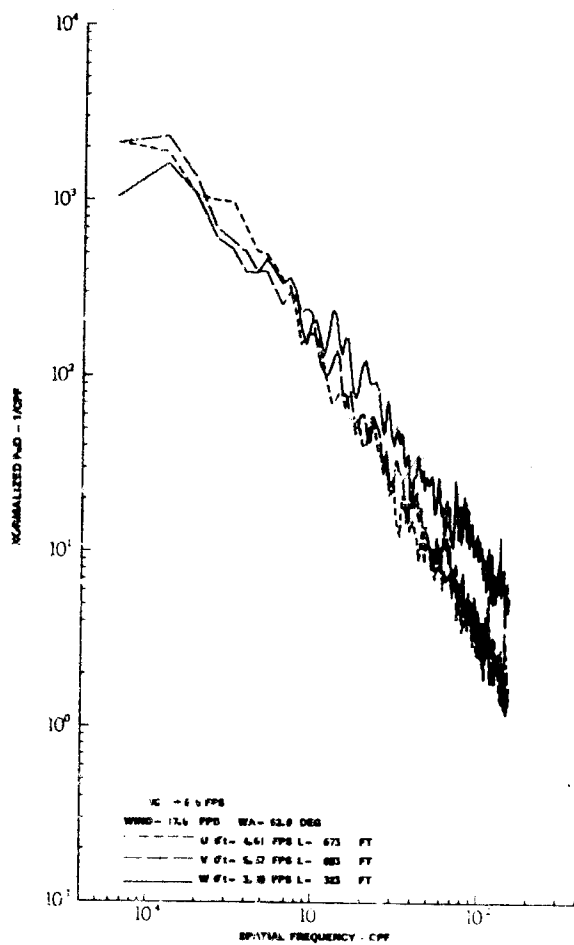


Turbulence Spectra Data For Test 219, Leg 5, Category 112213

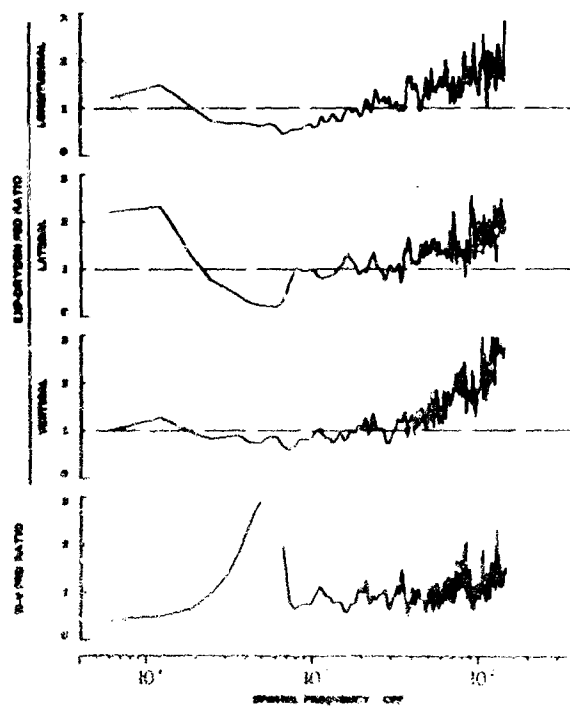
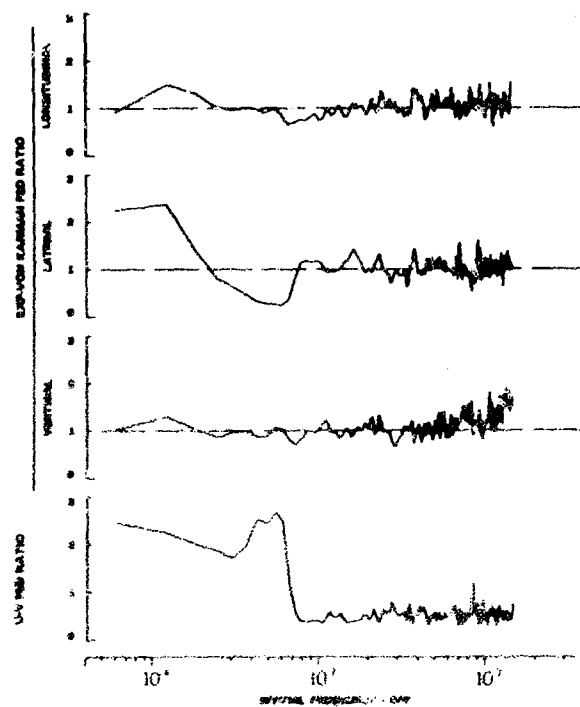
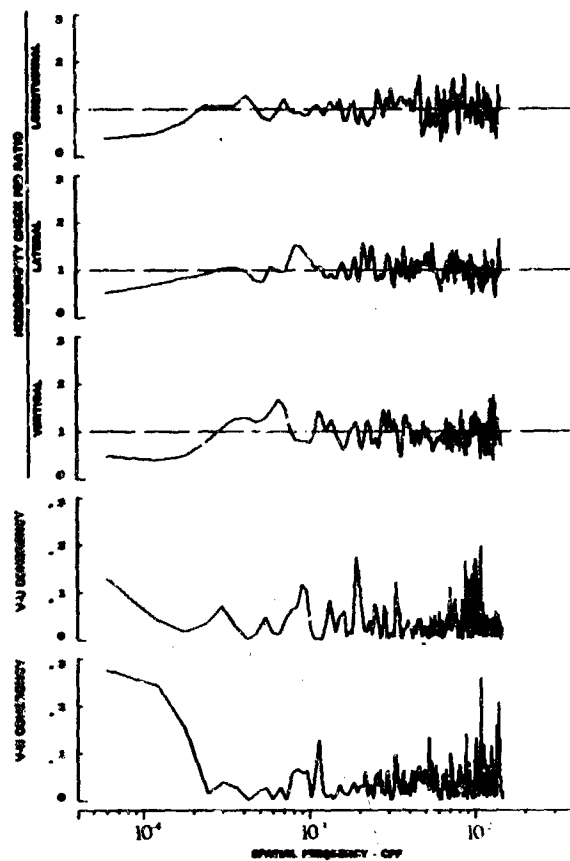
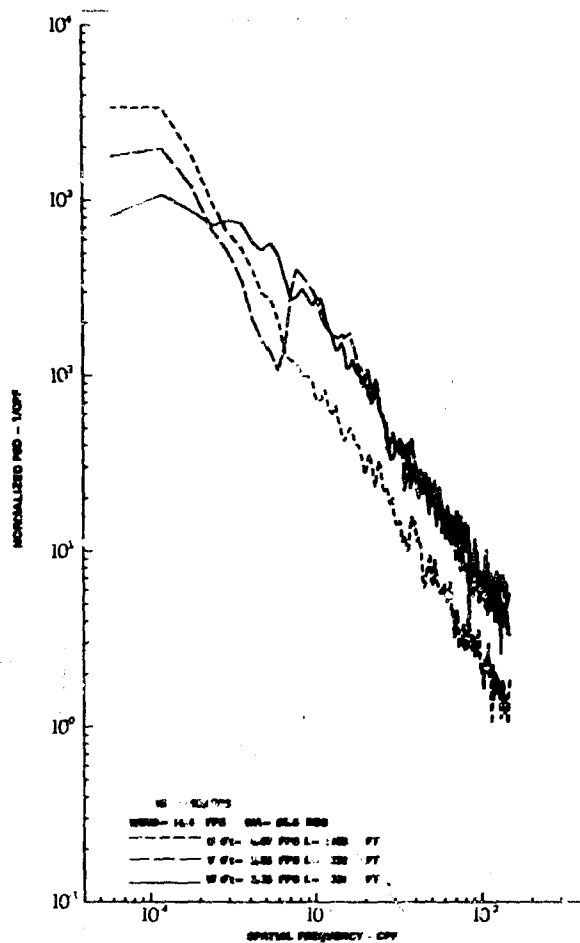




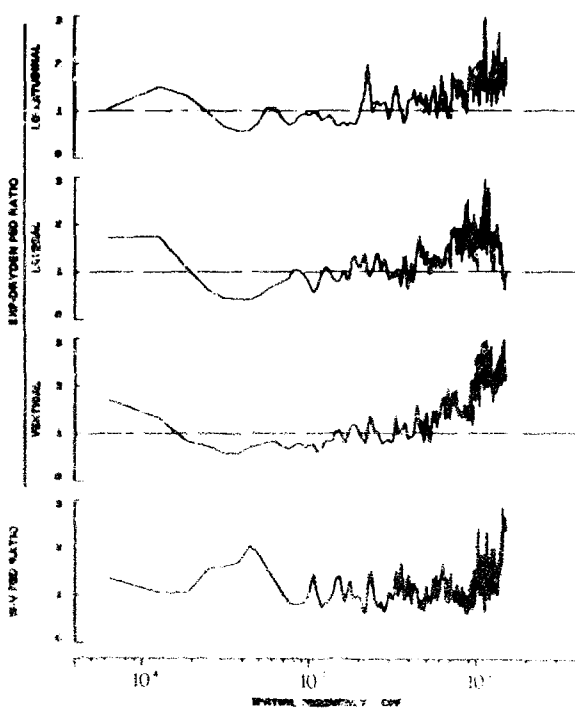
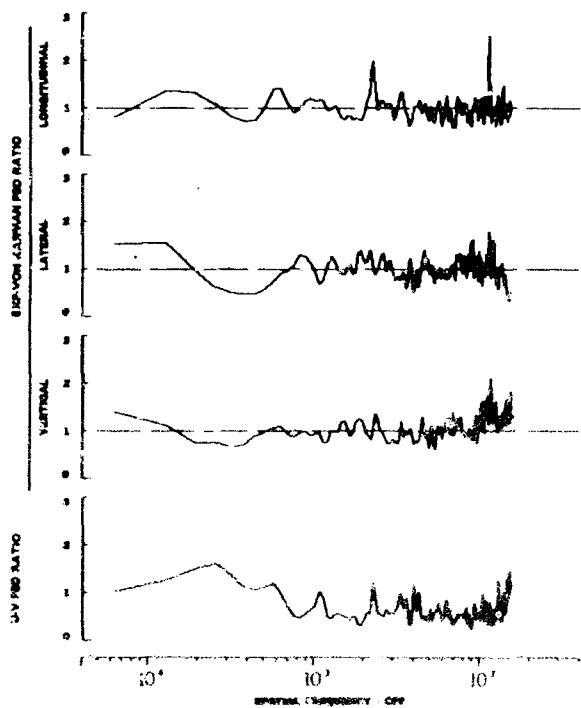
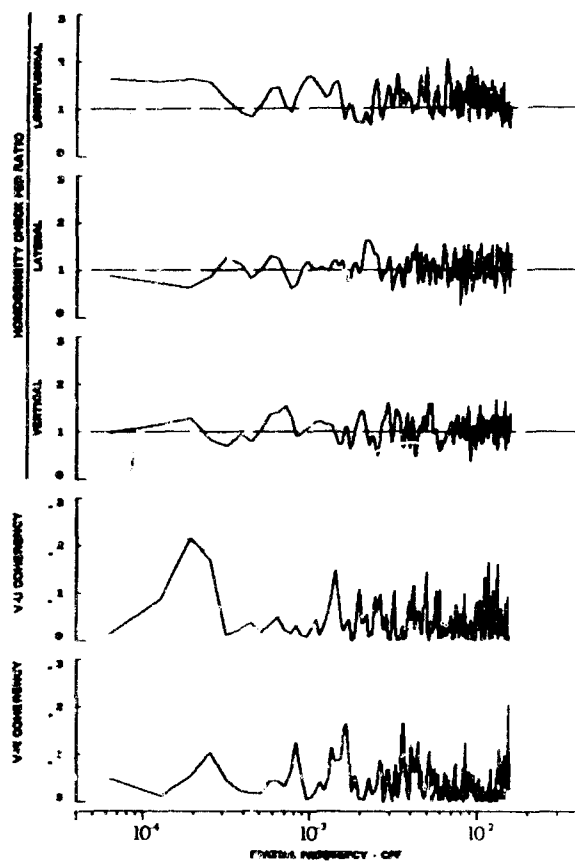
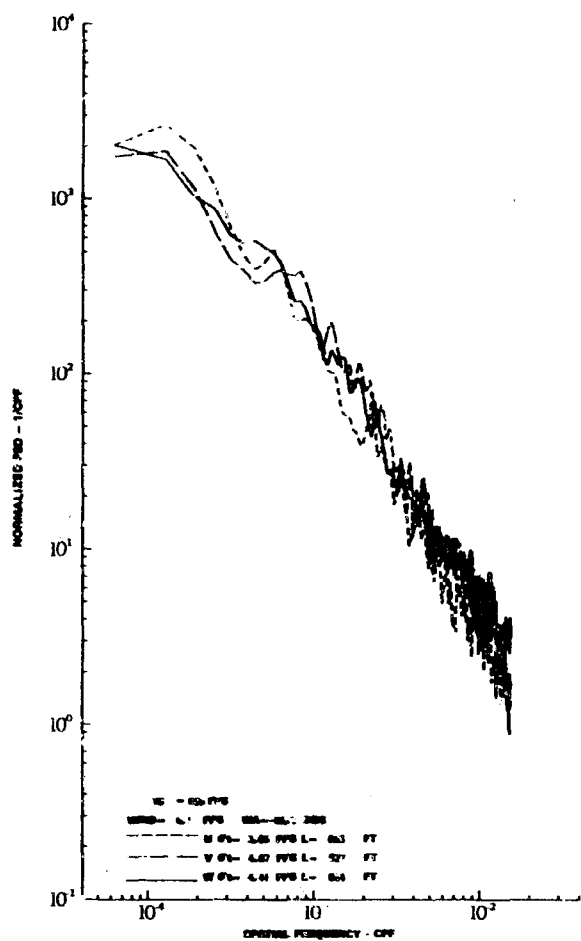
Turbulence Spectra Data For Test 220, Leg 4, Category 113313



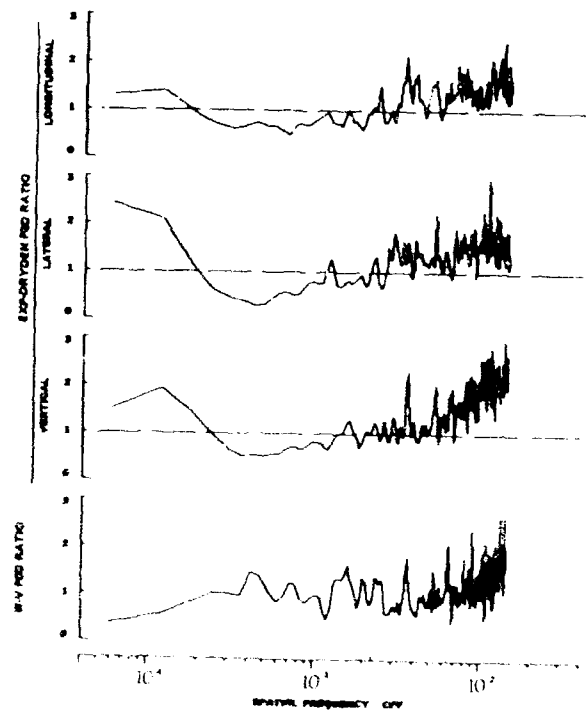
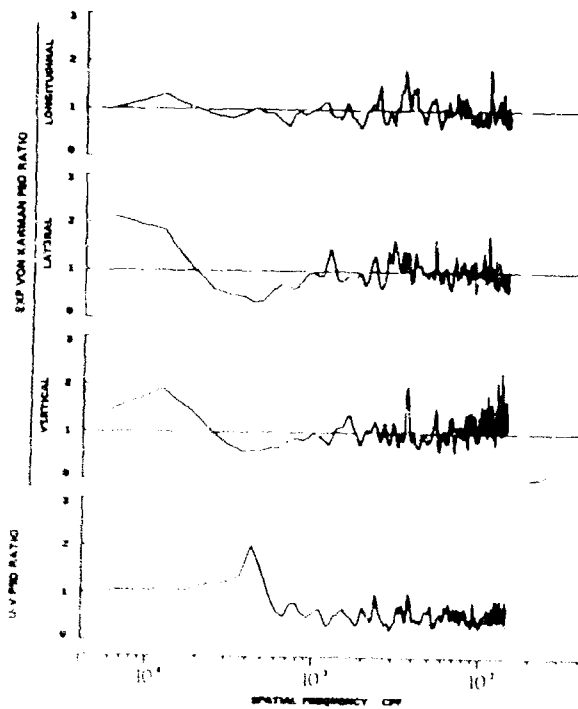
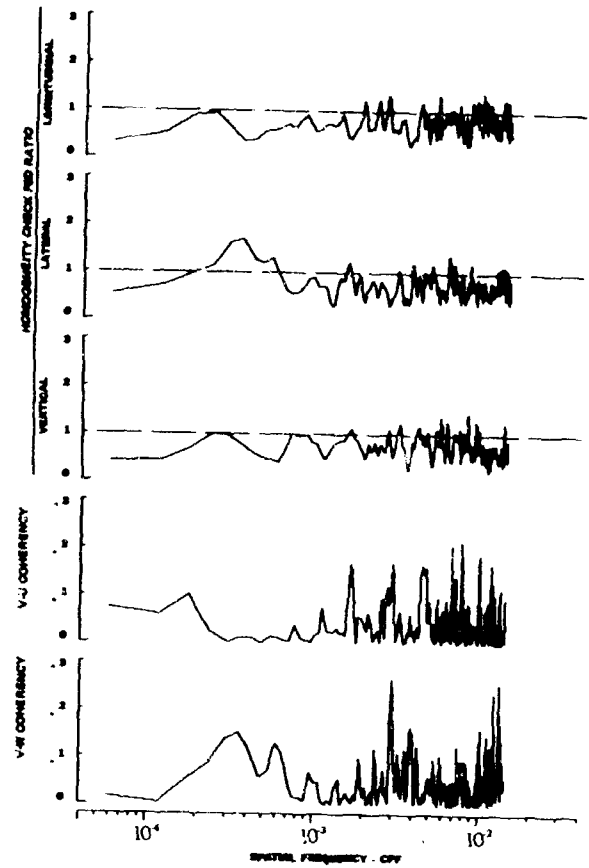
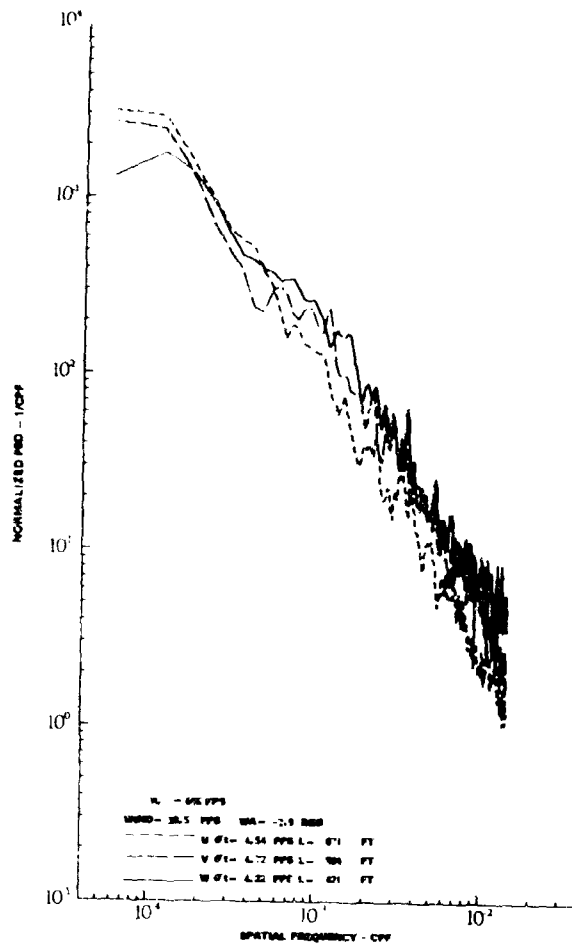
Turbulence Spectra Data For Test 220, Leg 6, Category 113313



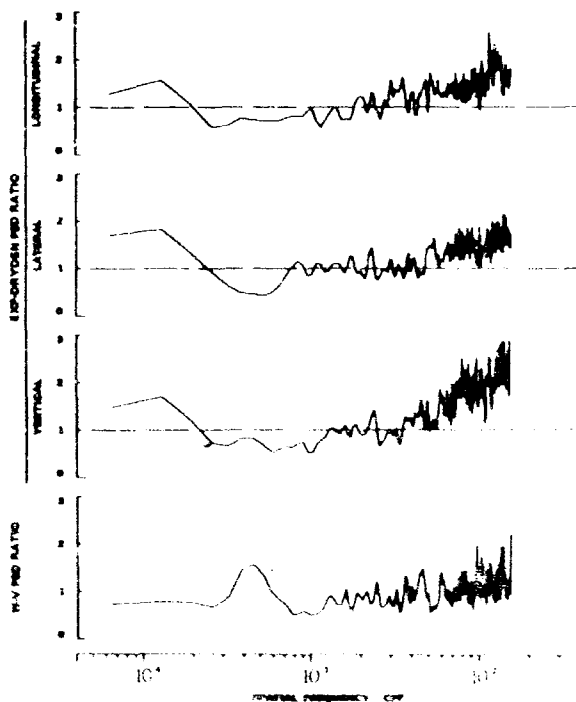
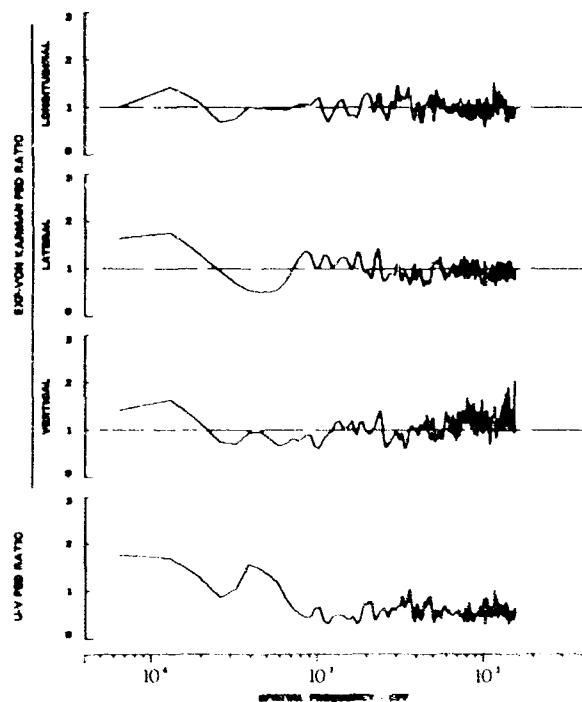
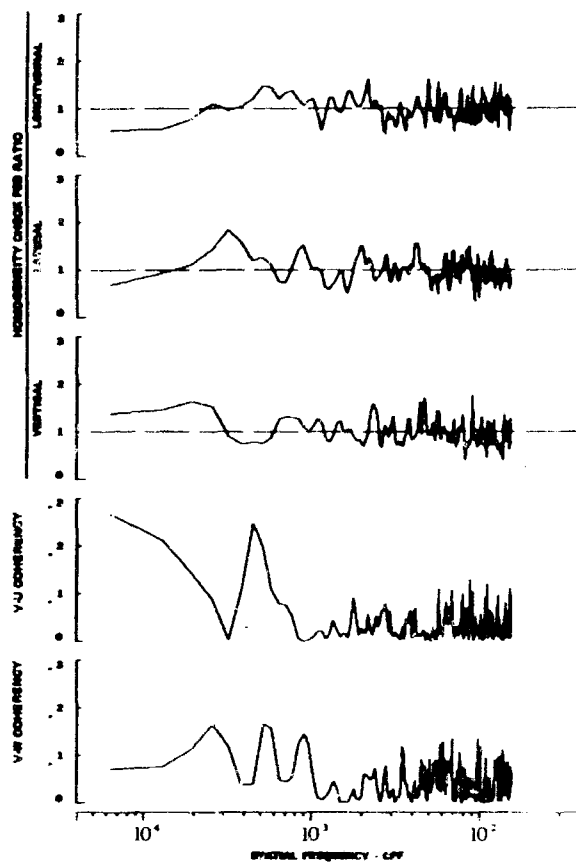
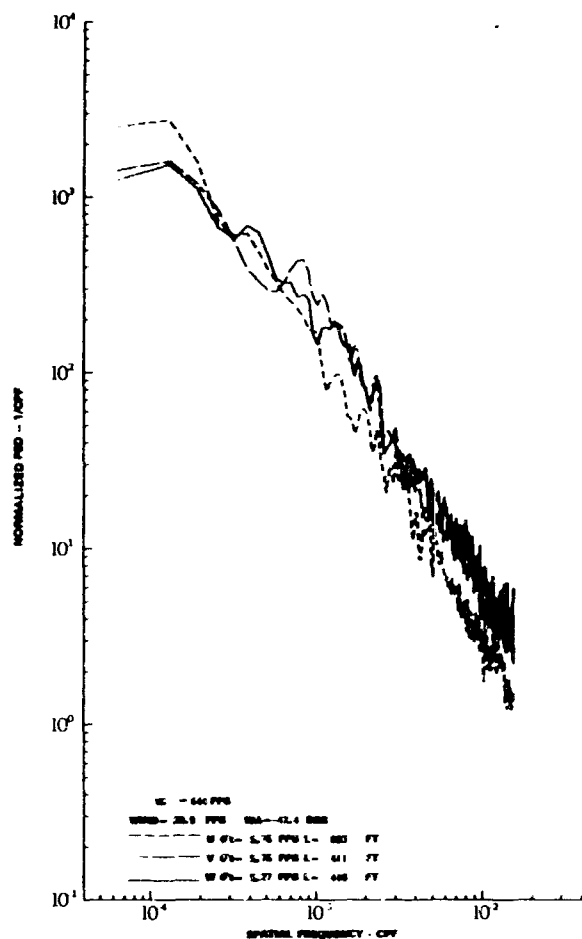
Turbulence Spectra Data for Test 220, Log 8 Category 41313



Turbulence Spectra Data For Test 221, leg 1, Category 122213

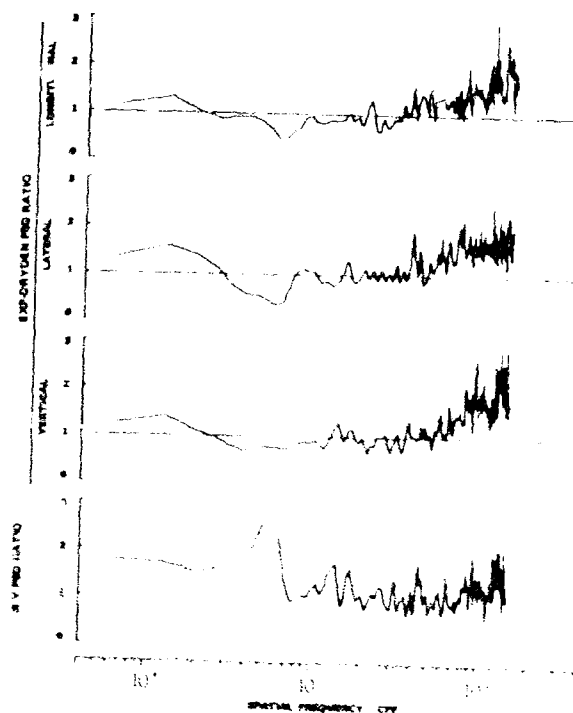
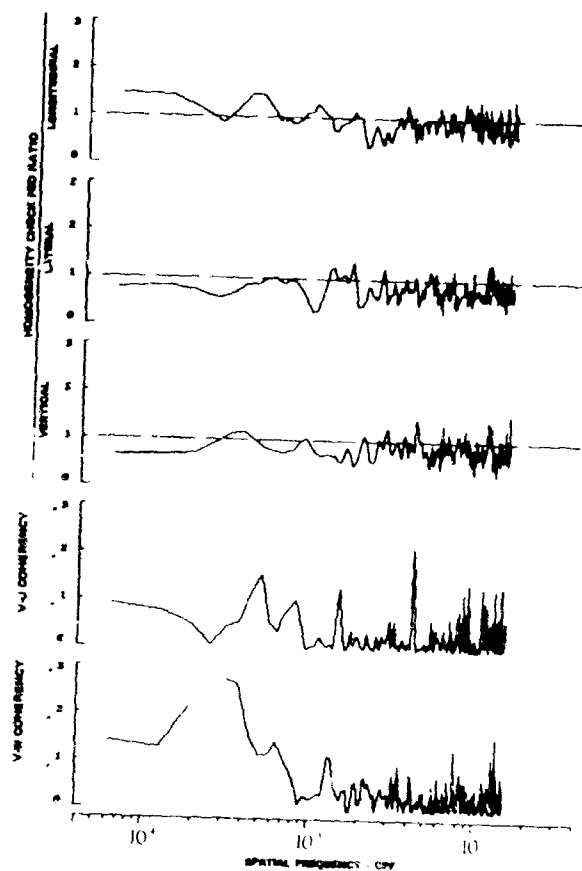


Turbulence Spectra Data for Test 221, Log 3, Category 123213



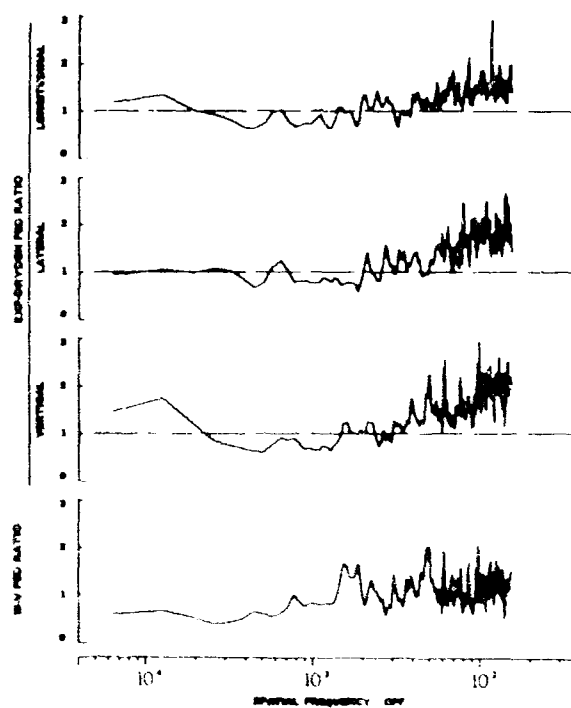
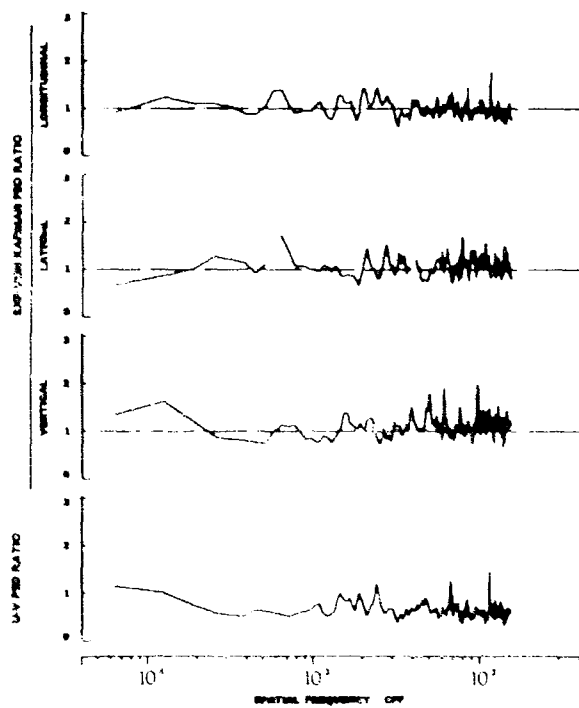
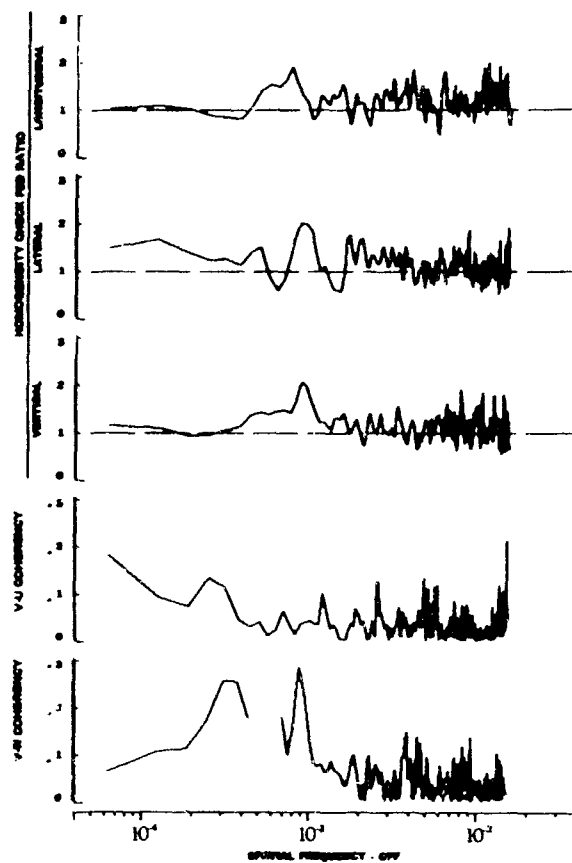
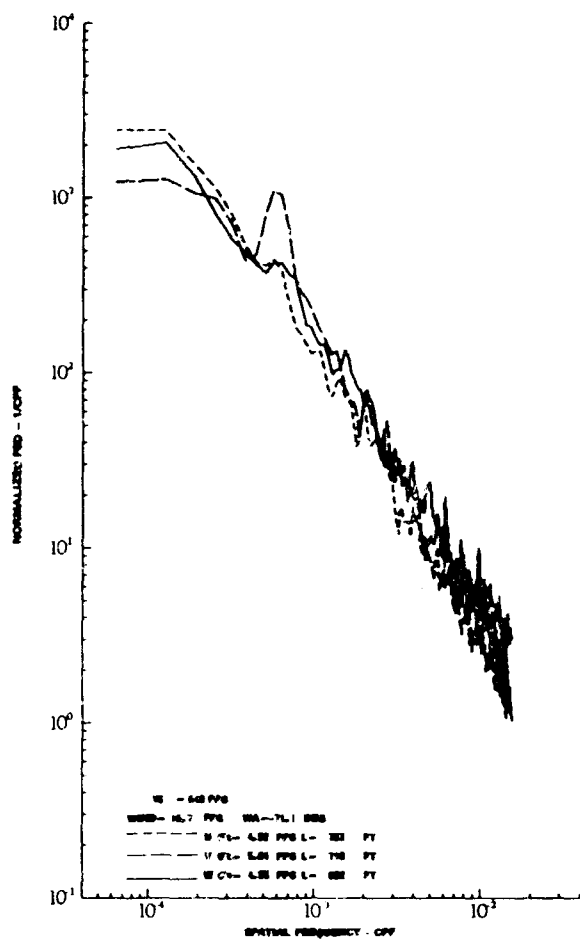
Turbulence Spectra Data for Test 221, Leg 5, Category 122213



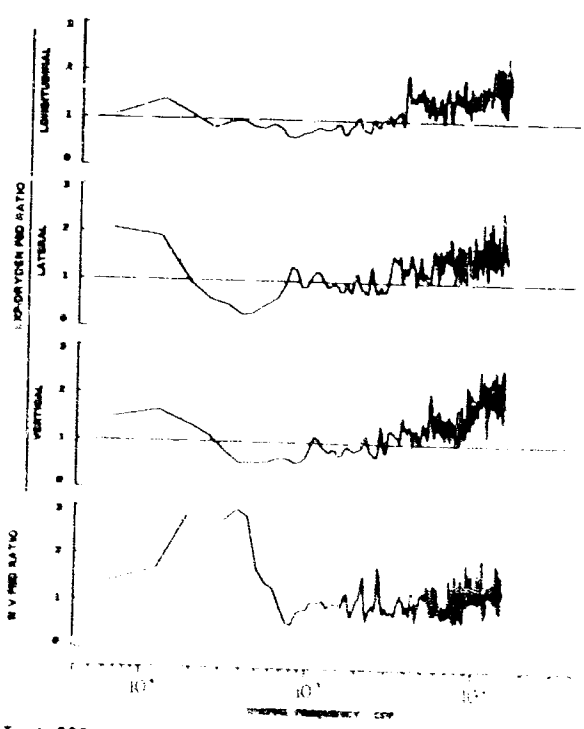
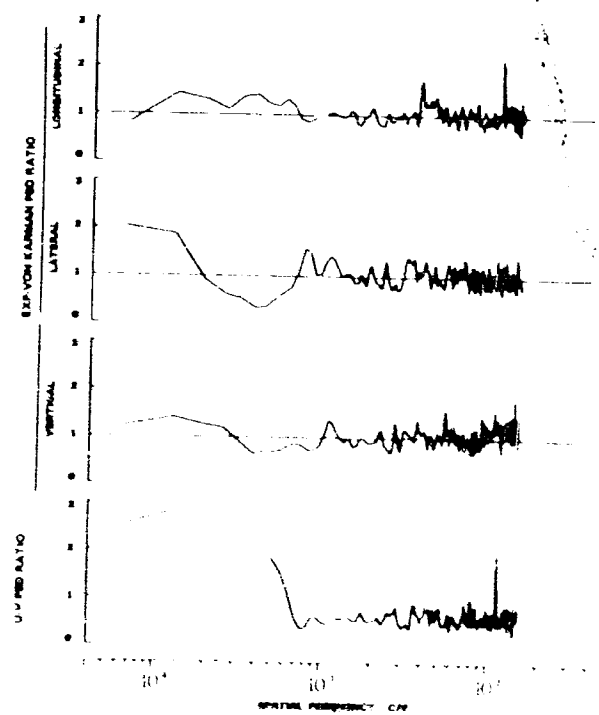
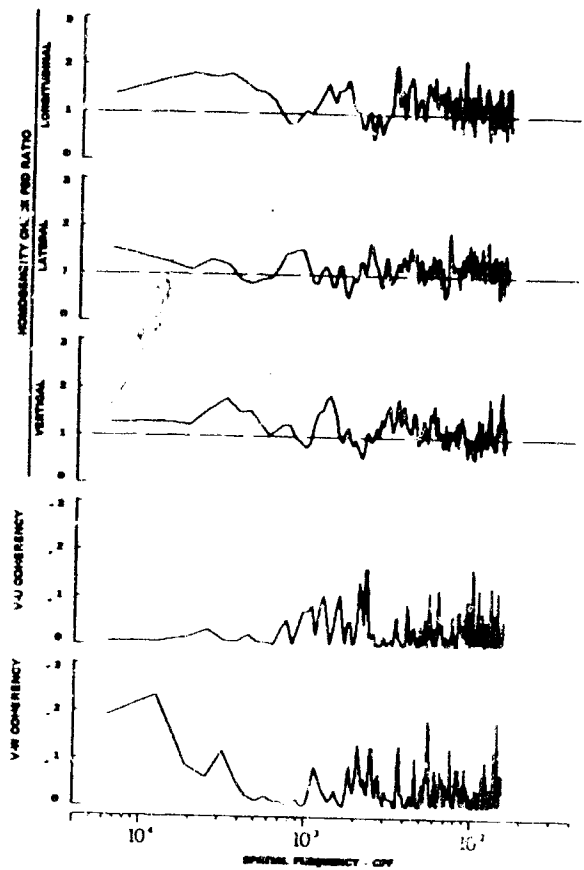
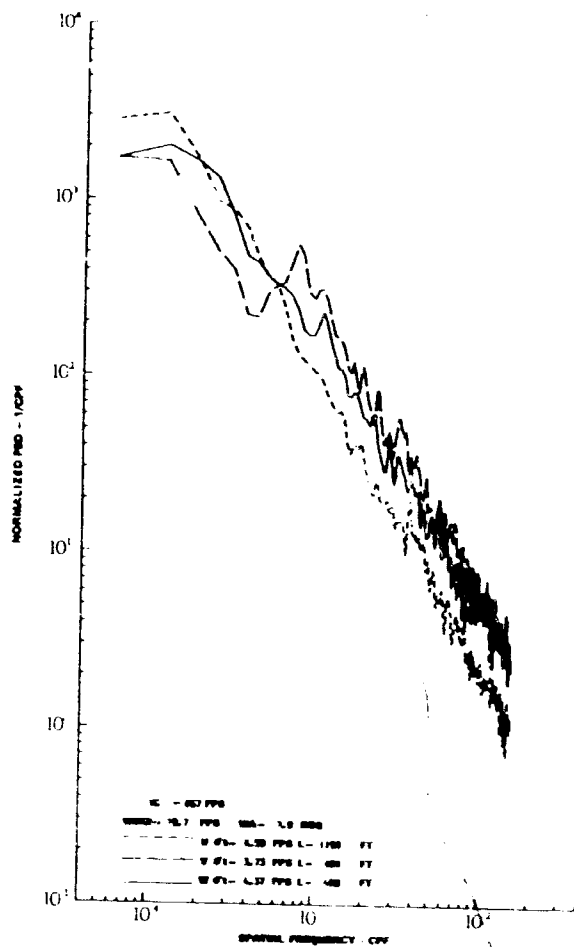


SPECTRAL FREQUENCY

Turbulence Spectra Data For Test 221, Lag 7, Category 123213

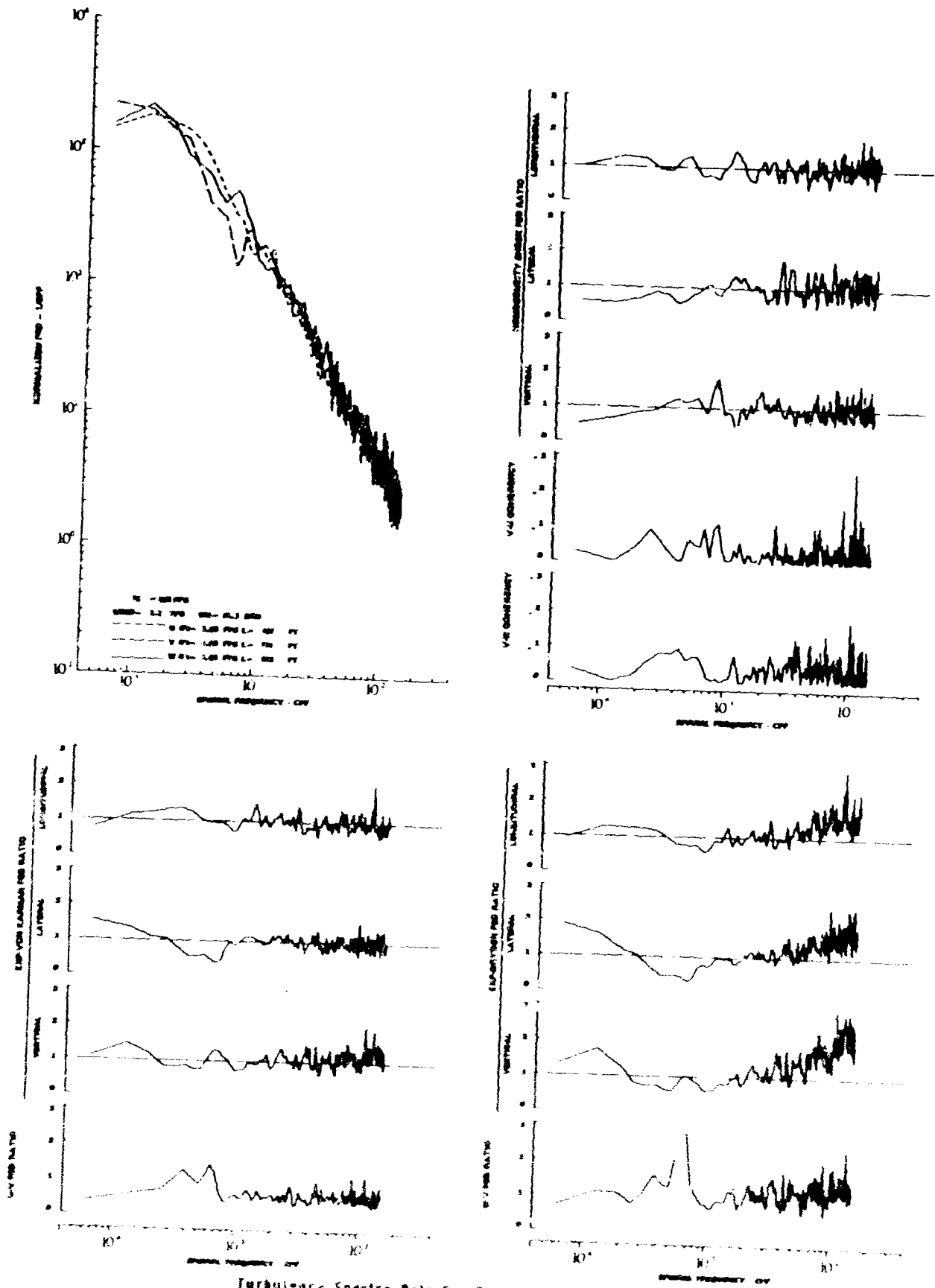


Turbulence Spectra Data For Test 222, Leg 2, Category 122313

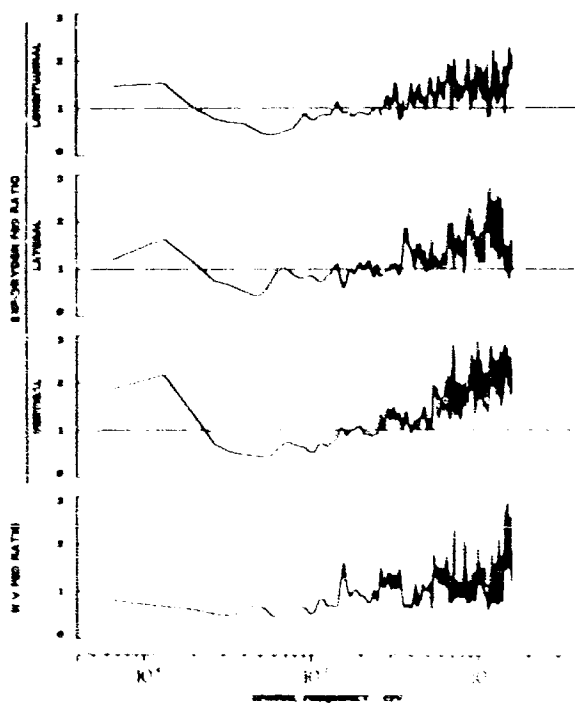
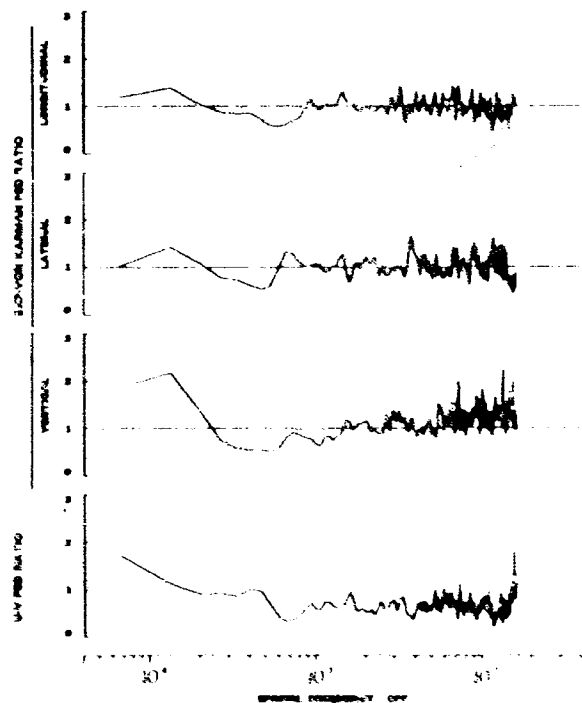
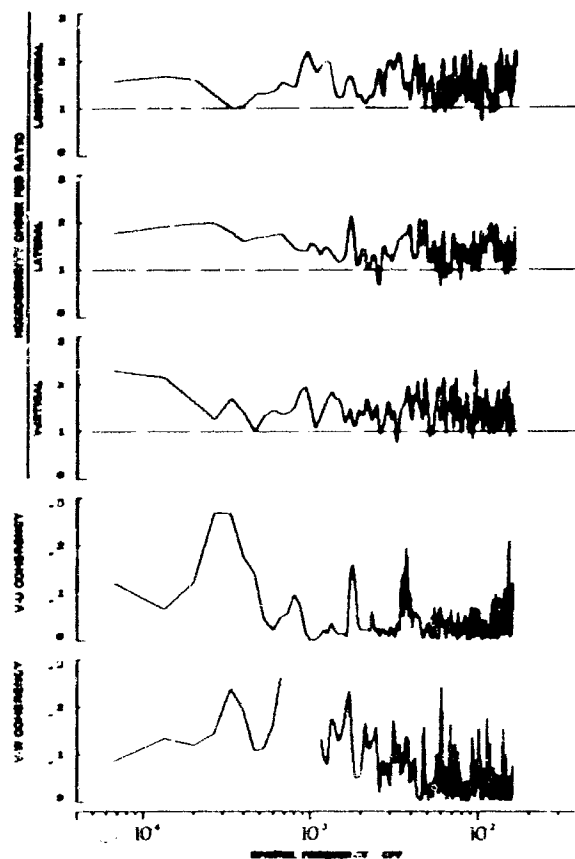
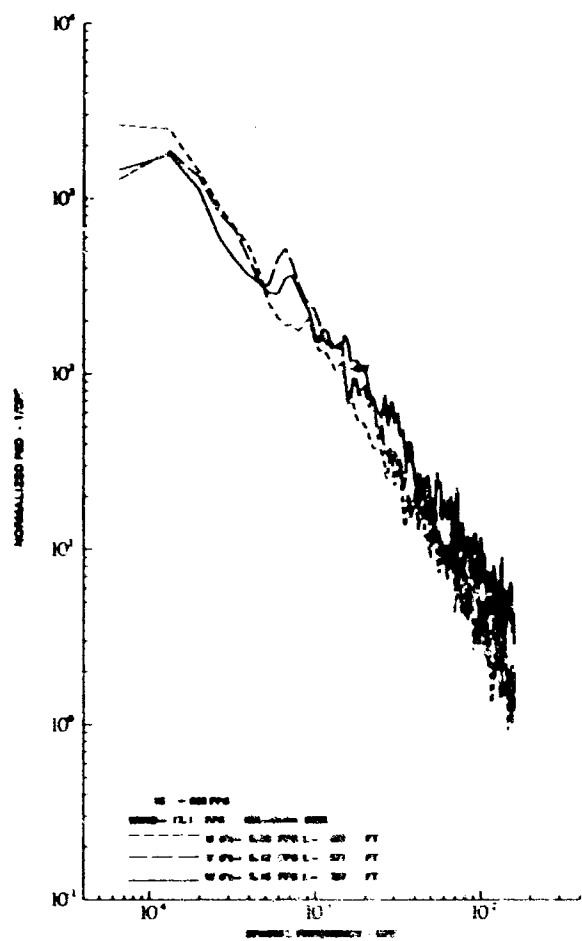


Turbulence Spectra Data For Test 222, Leg 4, Category 124313

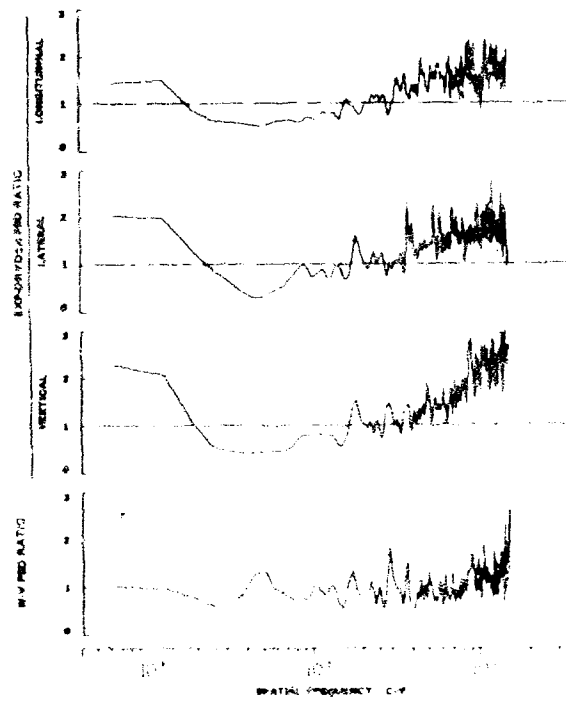
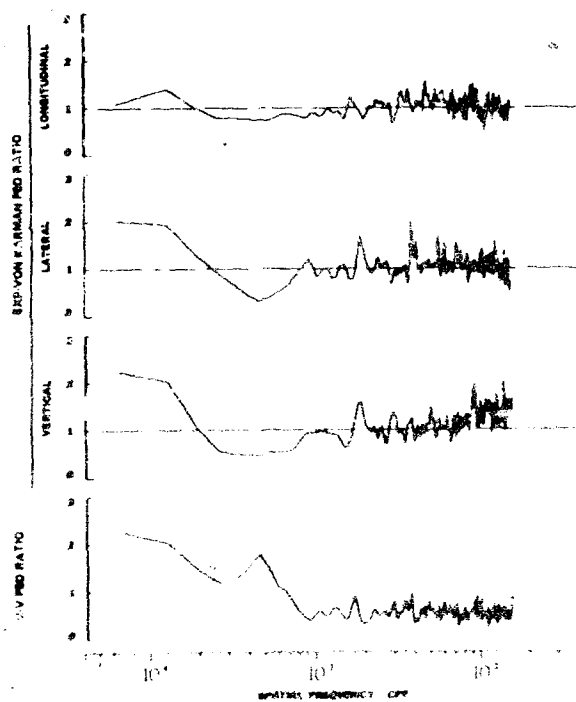
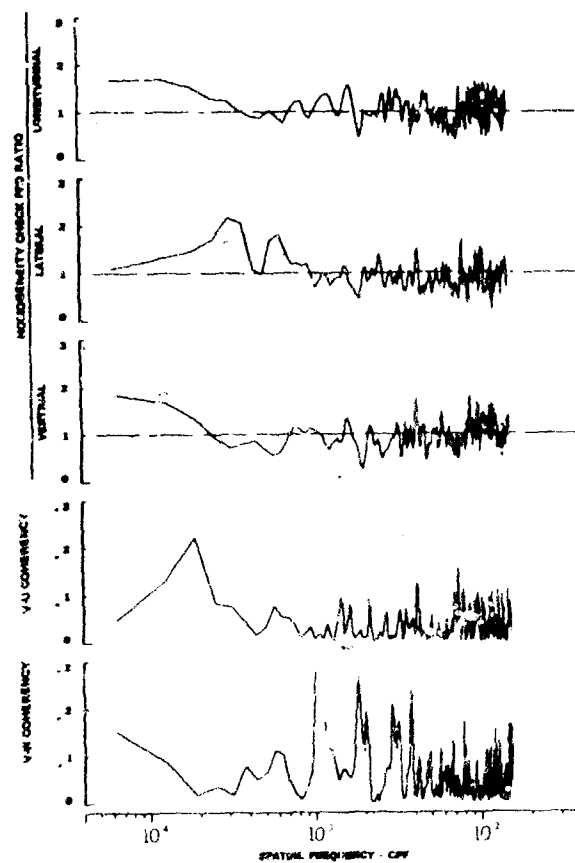
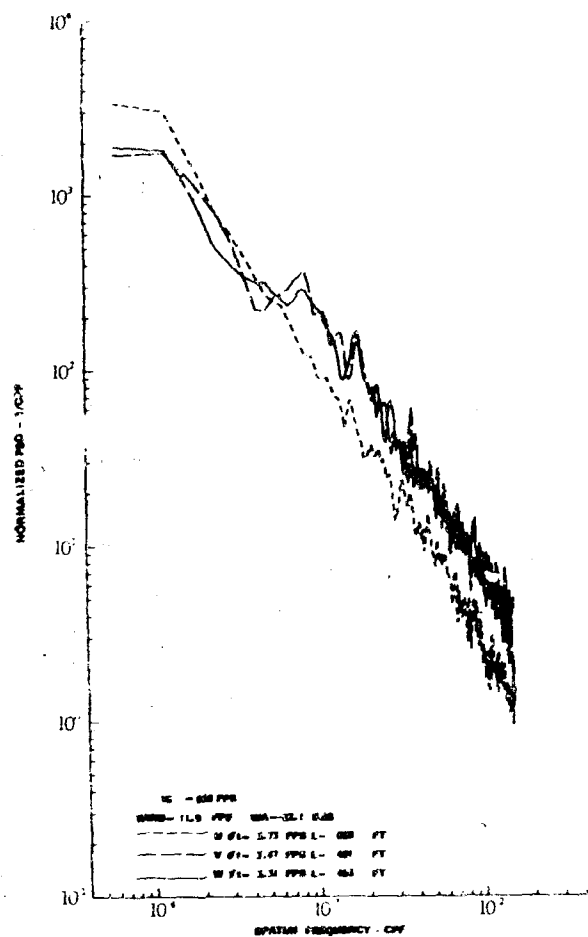




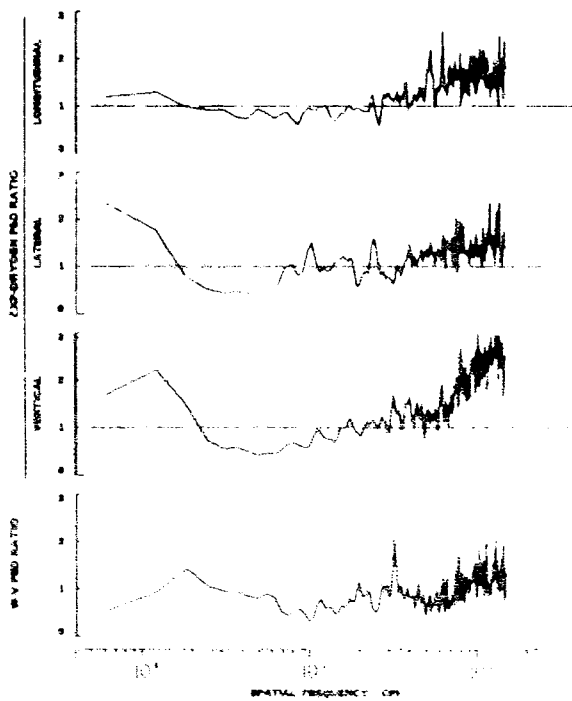
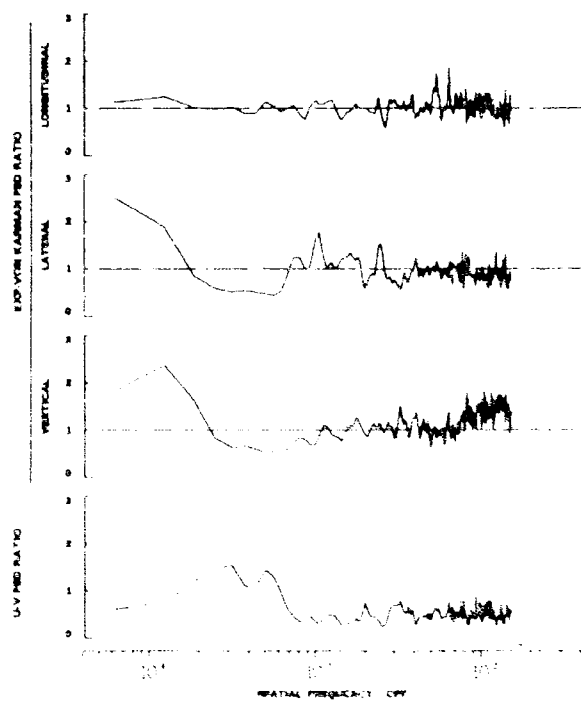
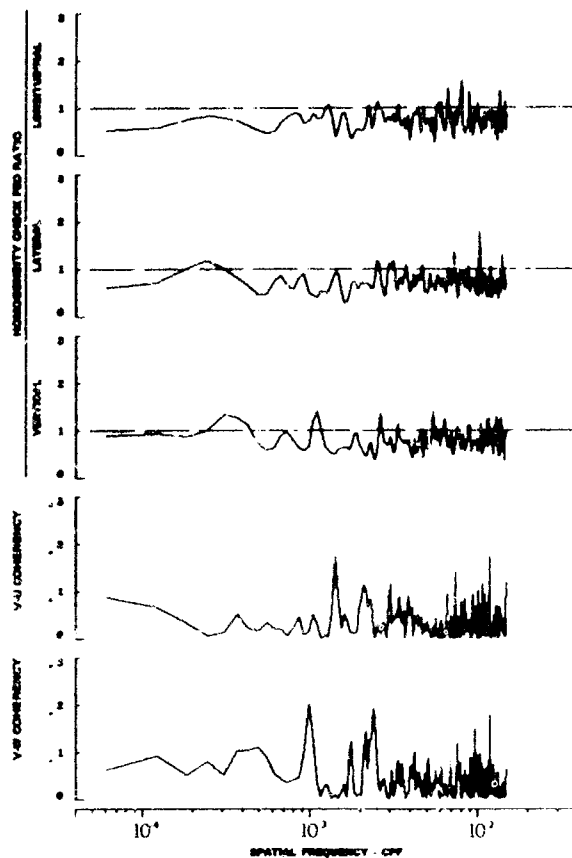
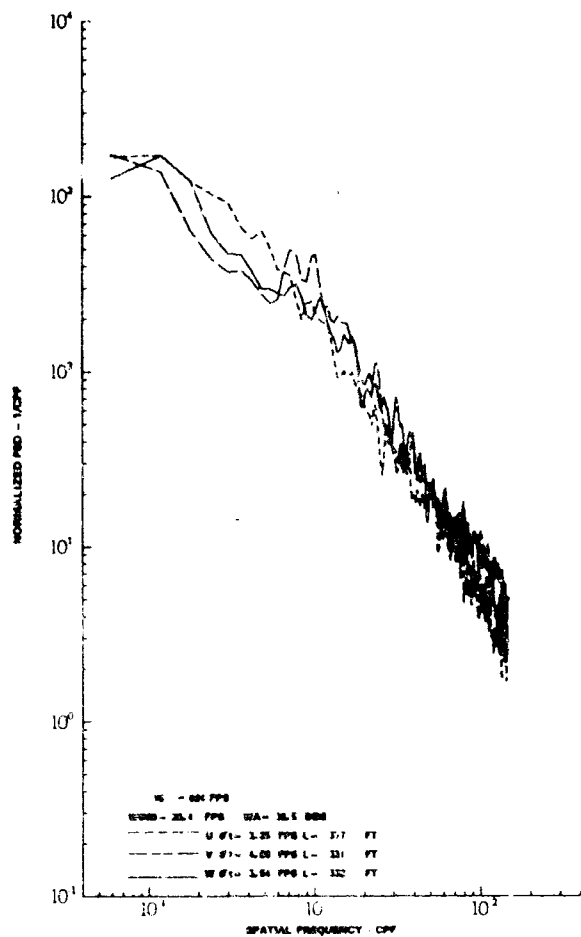
Turbulence Spectra Data For Test 222, Log 8, Category 042906



Turbulence Spectra Data for Test 224, Leg 2, Category 112213

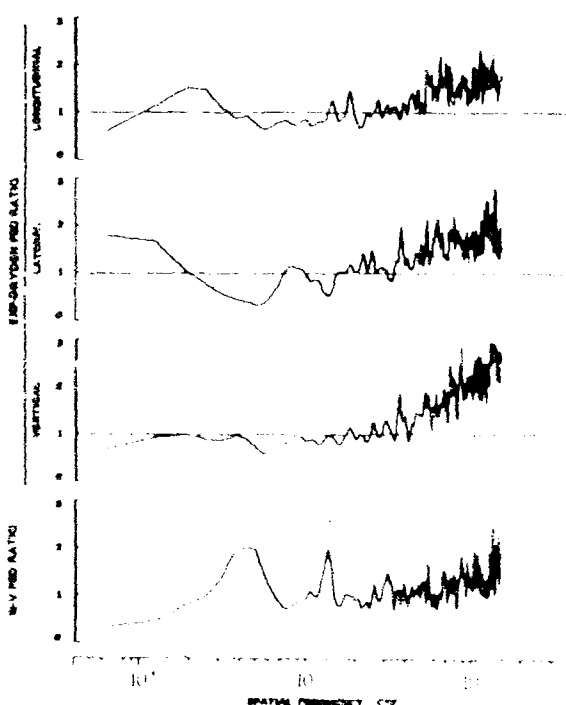
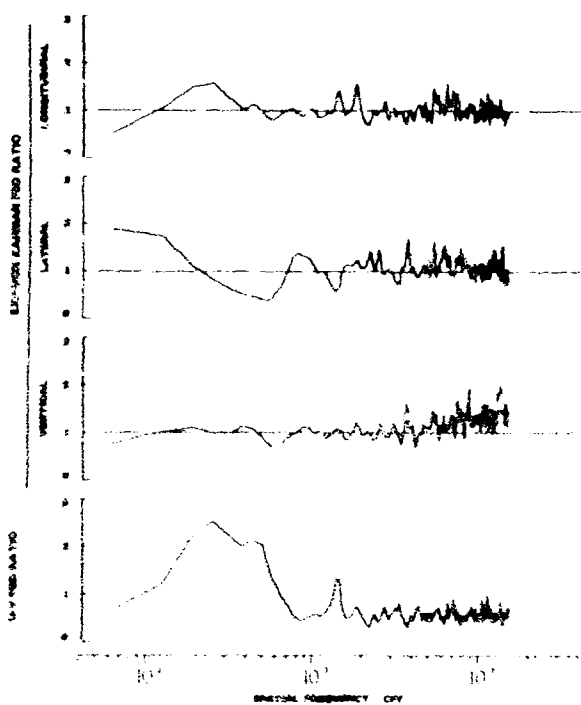
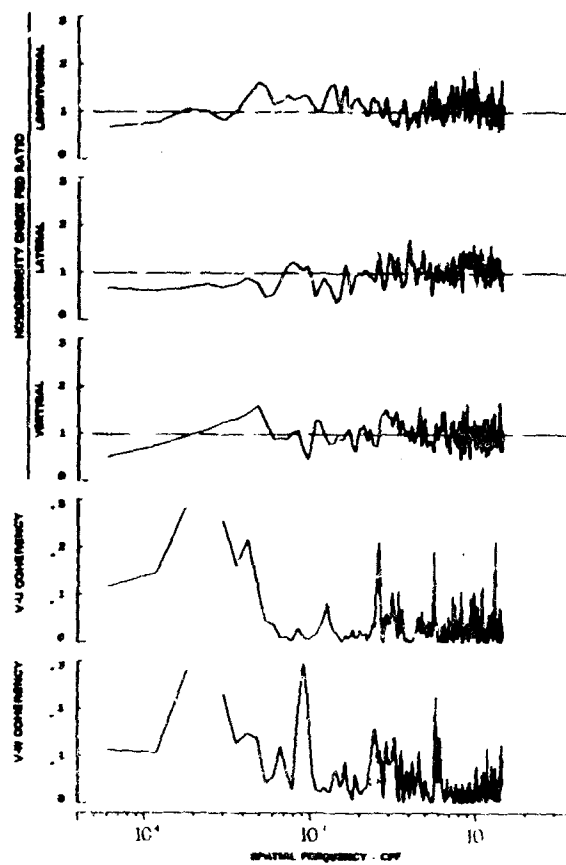
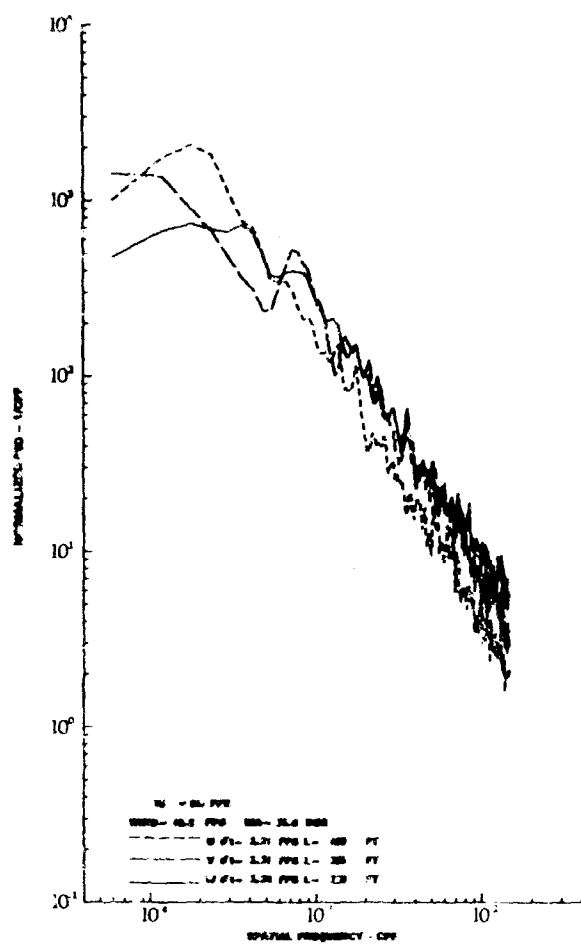


Turbulence Spectra Data for Test 224, Leg 4, Category 114213

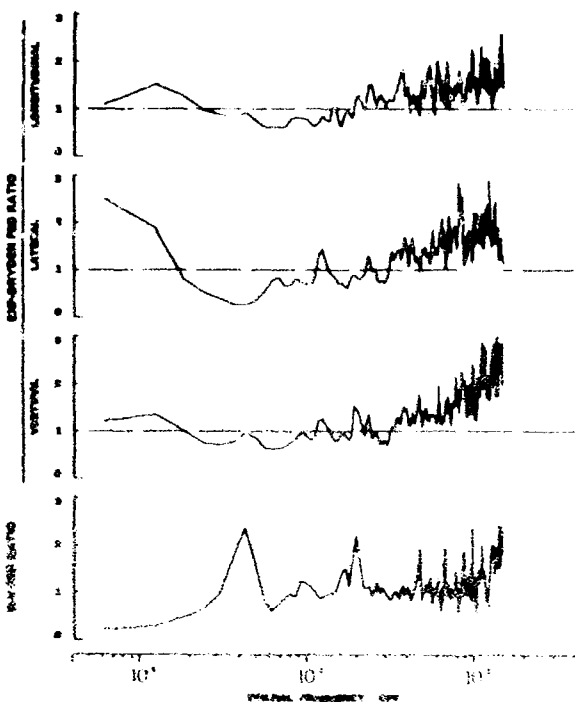
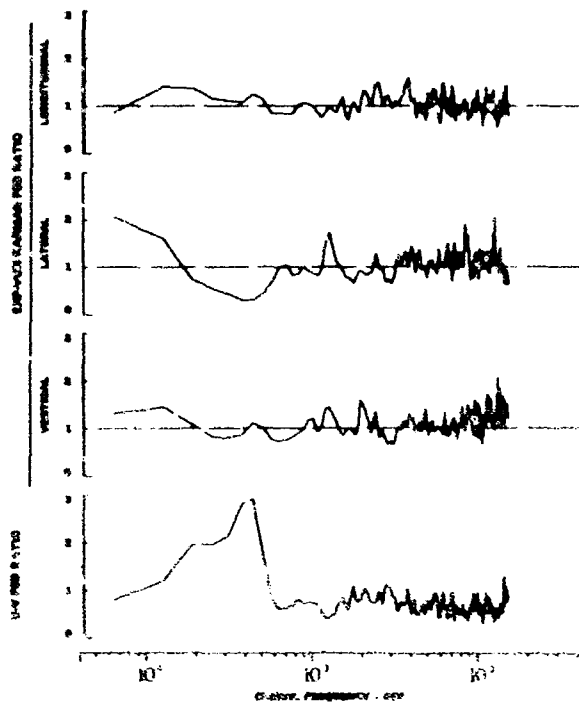
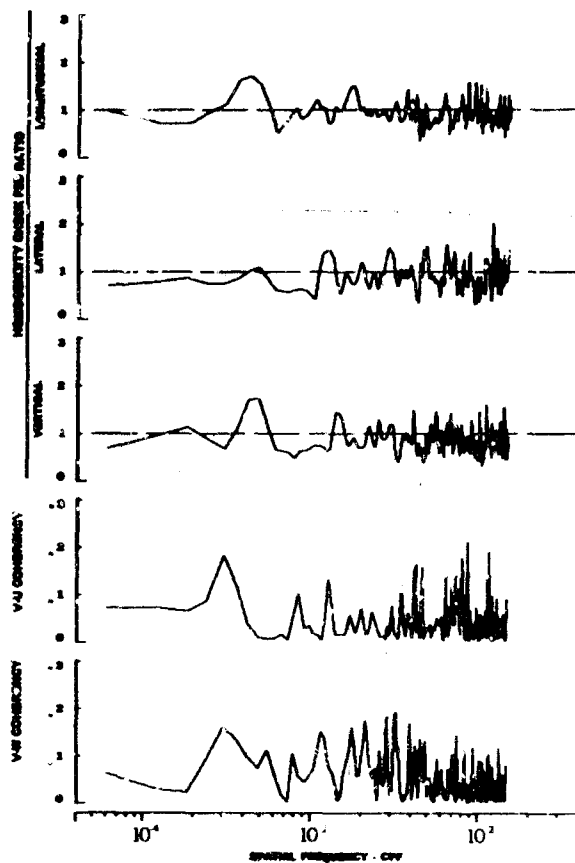
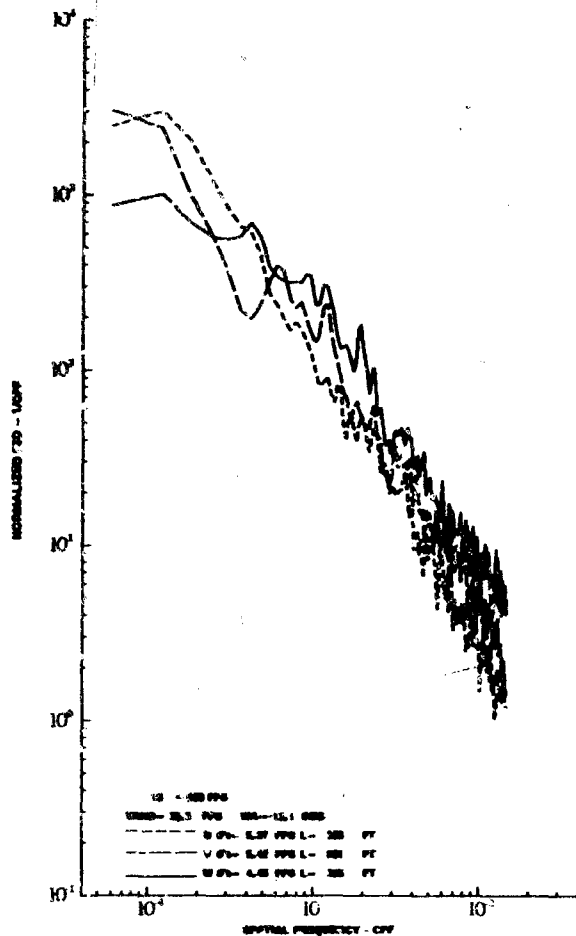


Turbulence Spectra Data For Test 224, Leg V, Category 112213

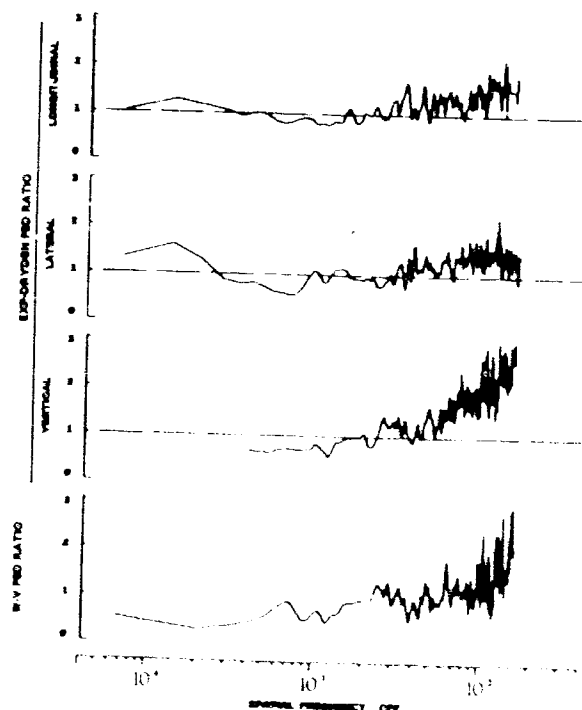
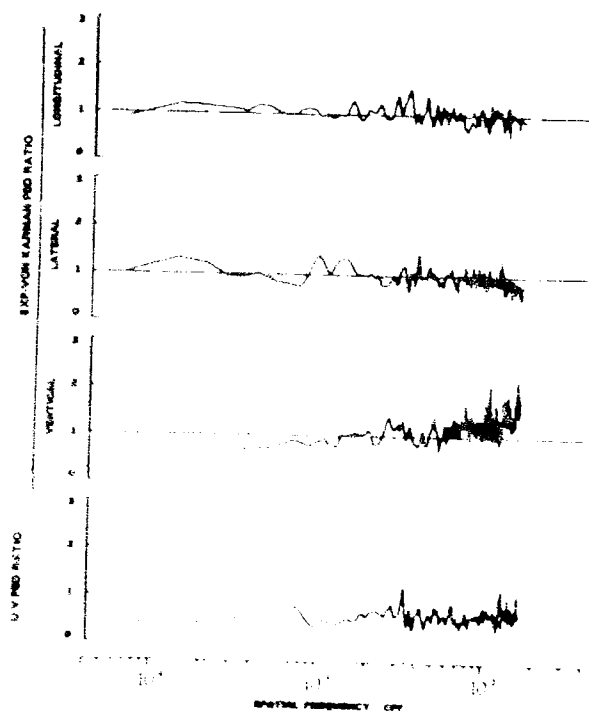
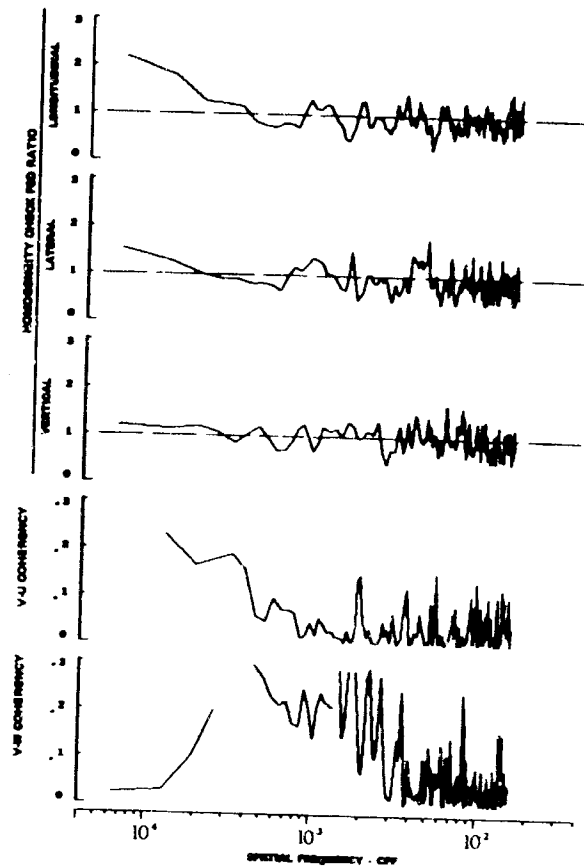
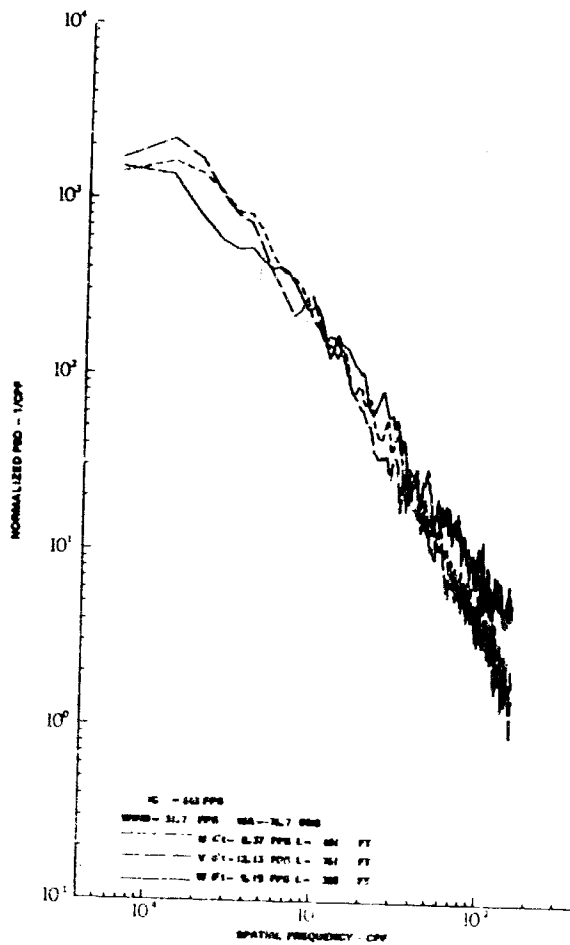




Turbulence Spectra Data For Test 224, Leg 8, Category 413213

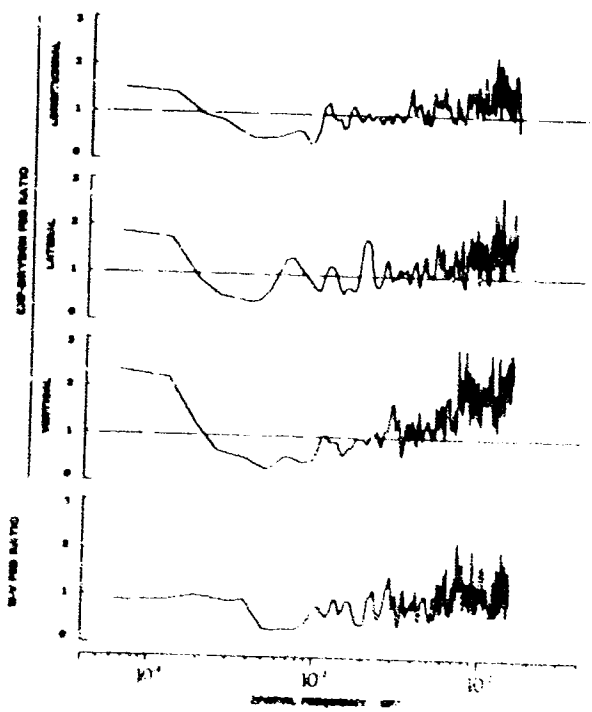
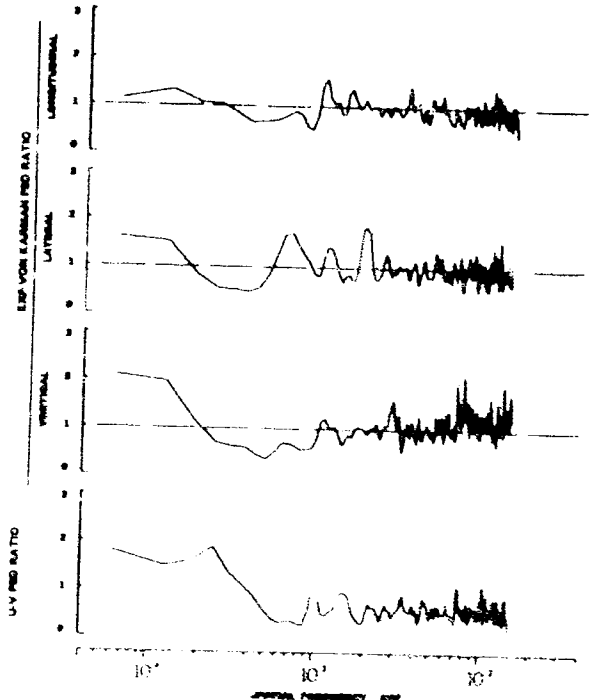
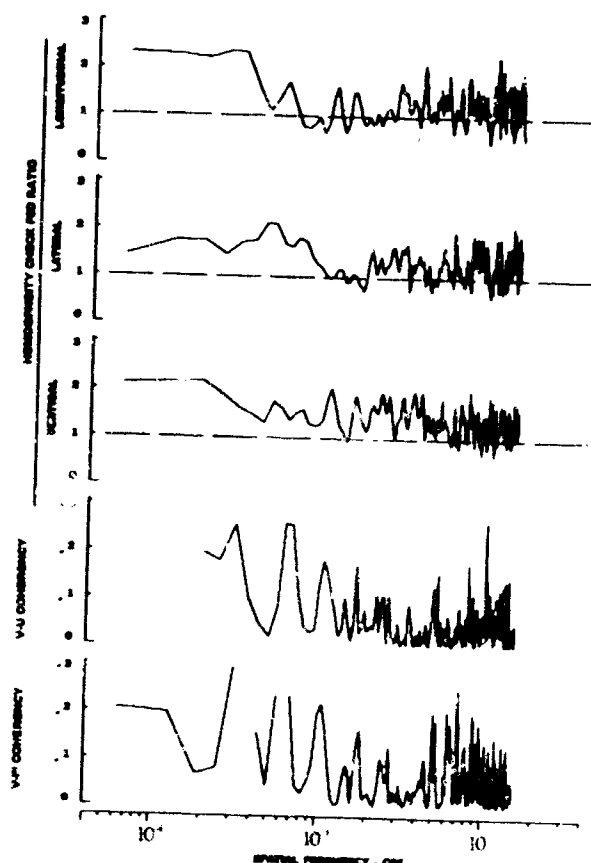
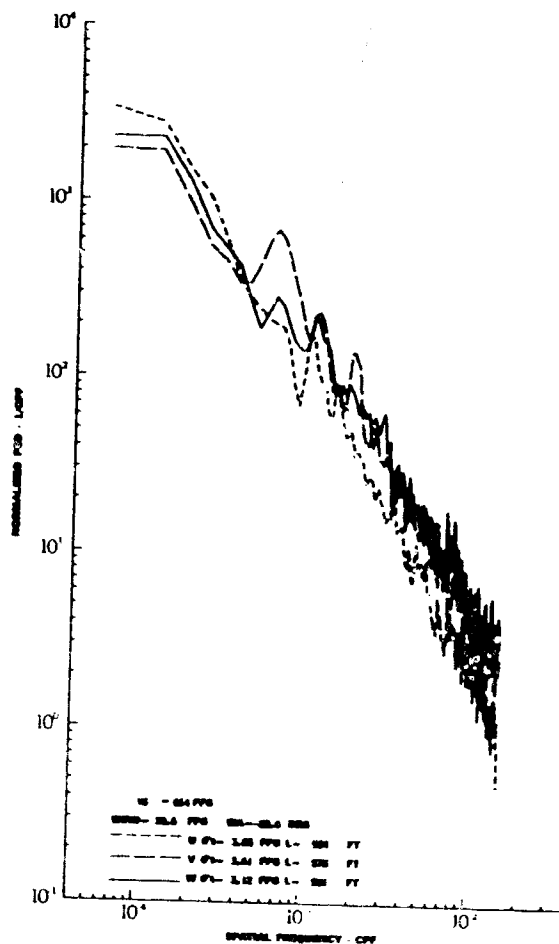


Turbulence Spectra Data For Test 225, Leg 3, Category 111311

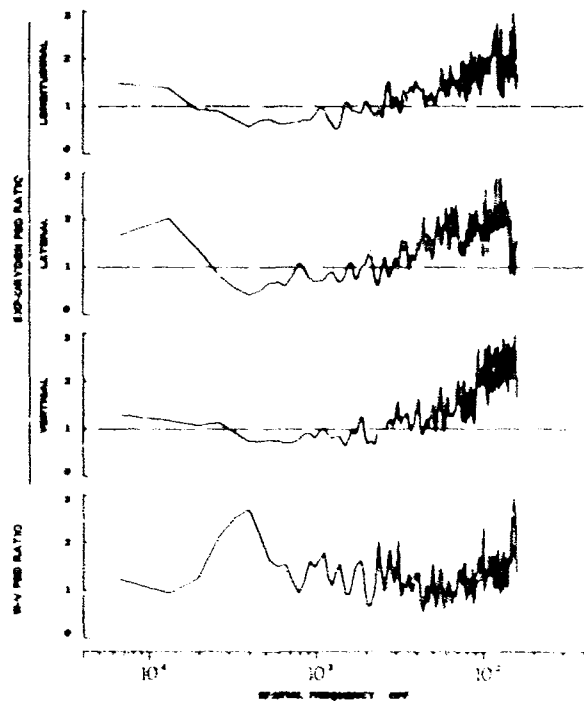
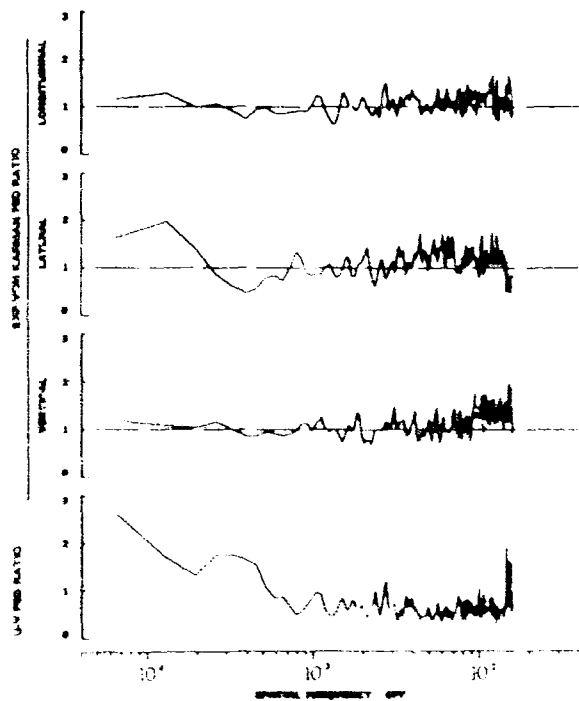
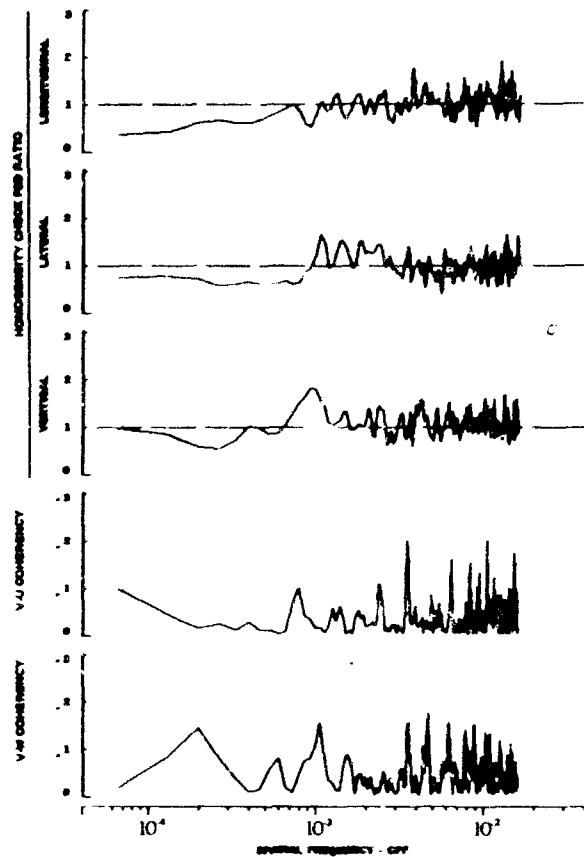
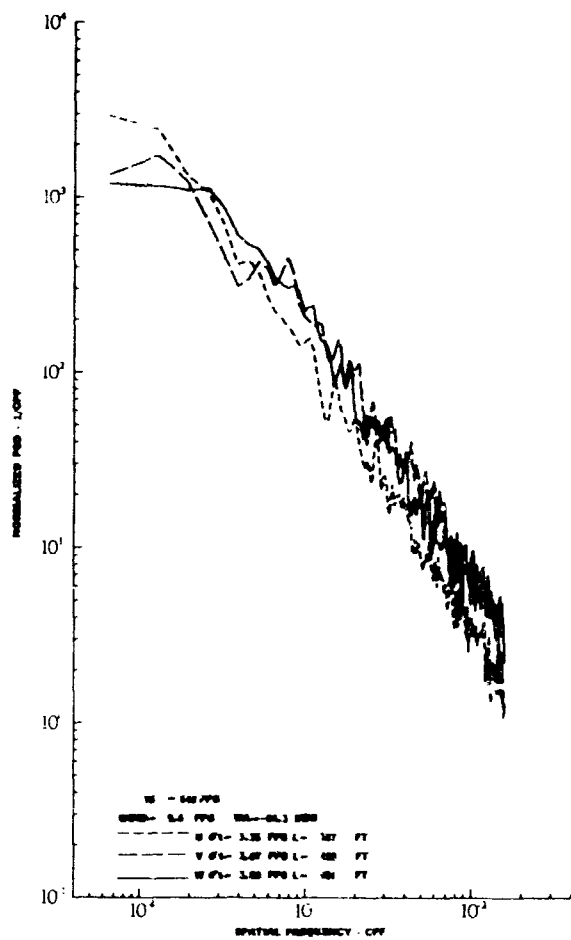


Turbulence Spectra Data For Test 225, Leg 5, Category 114313

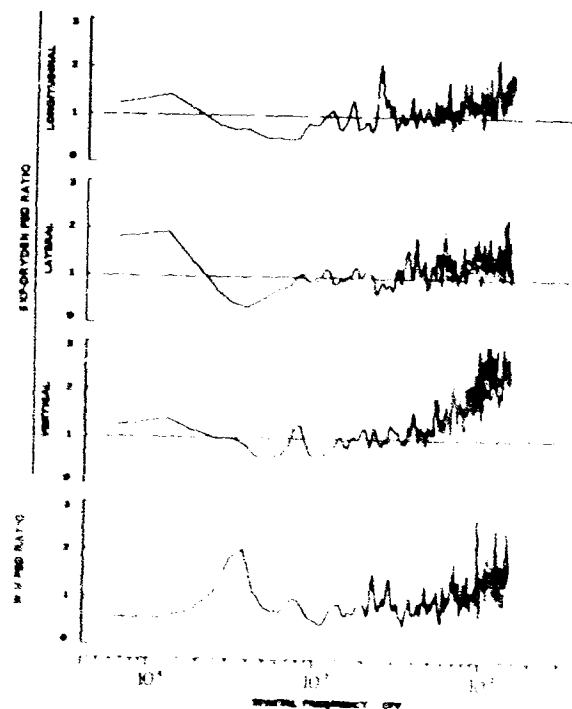
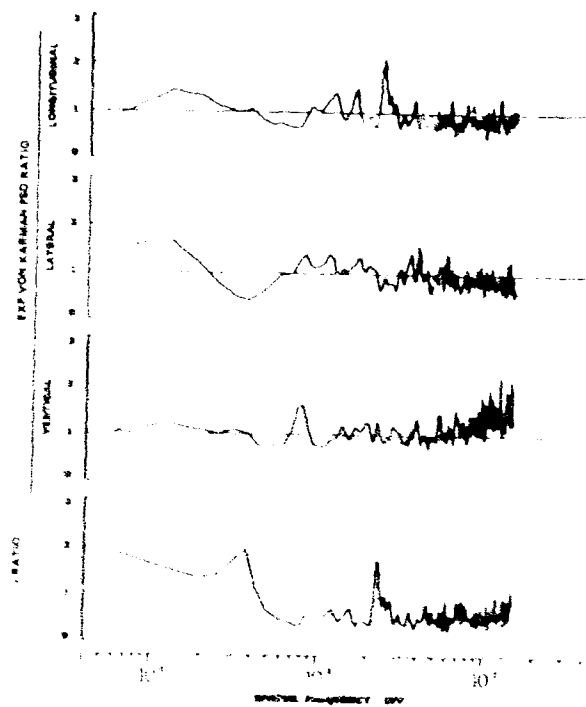
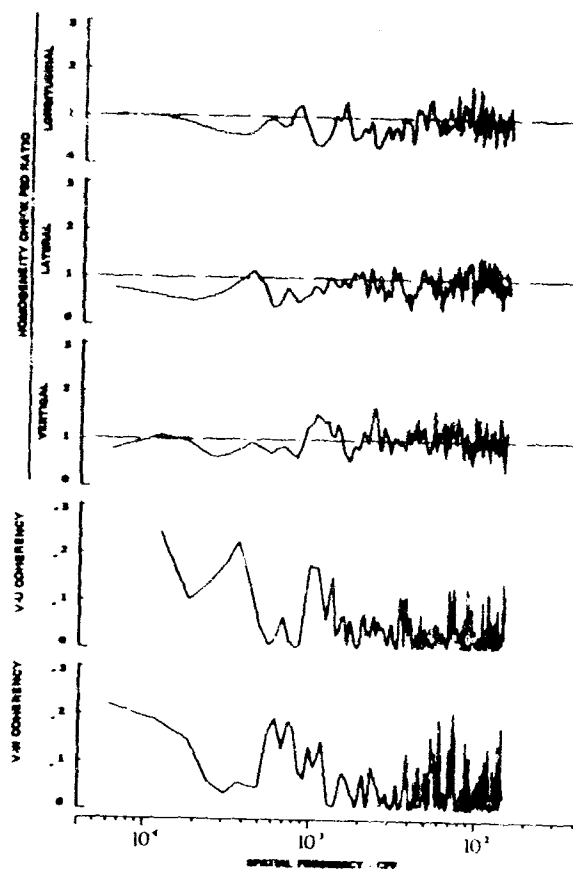
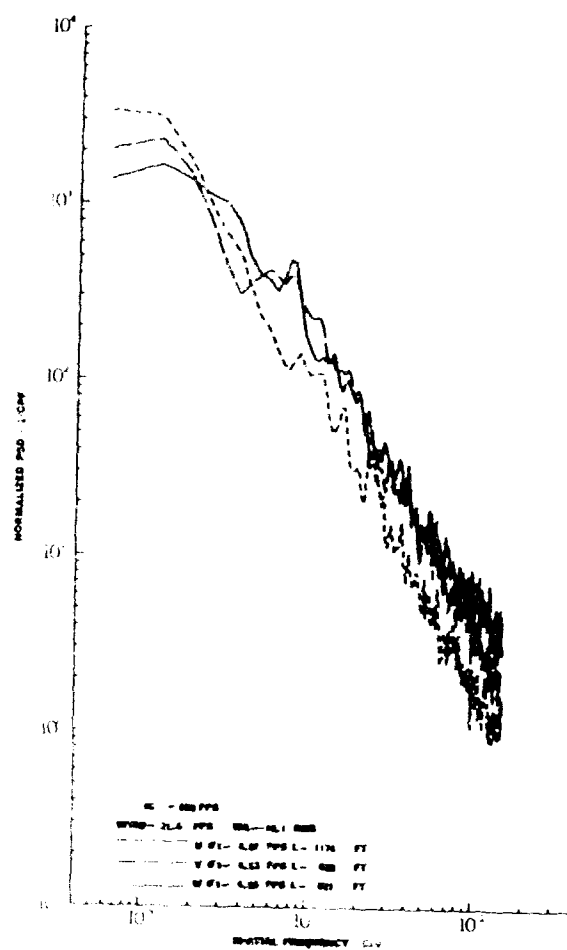




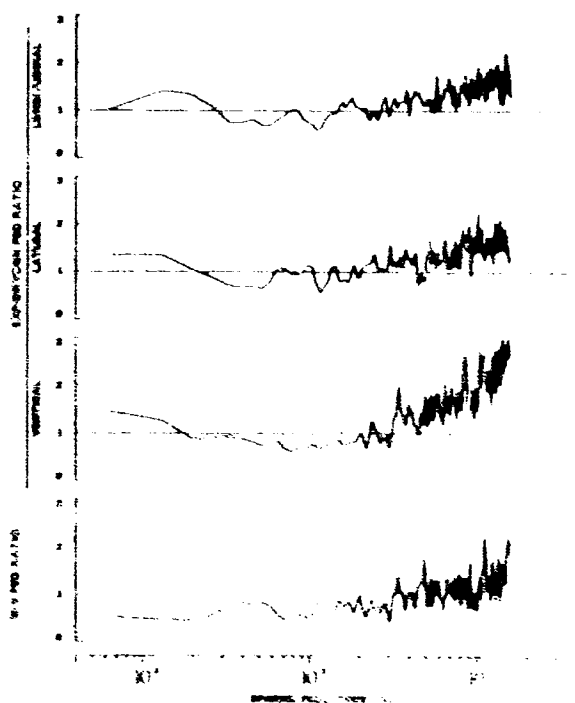
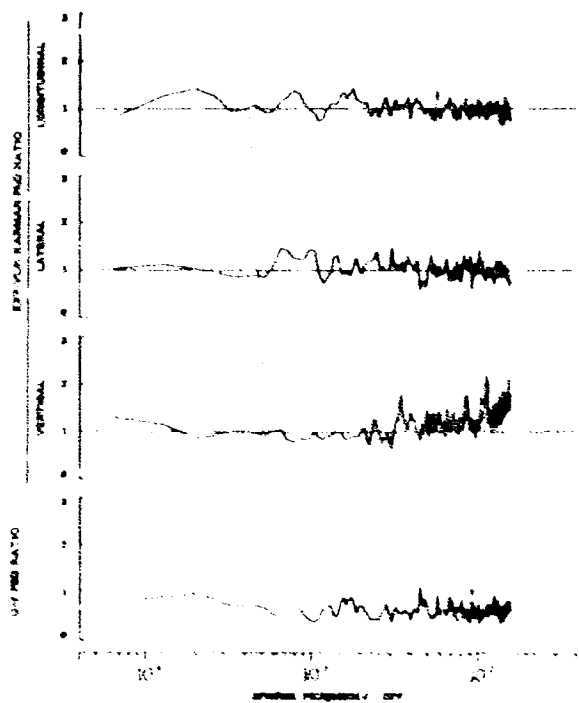
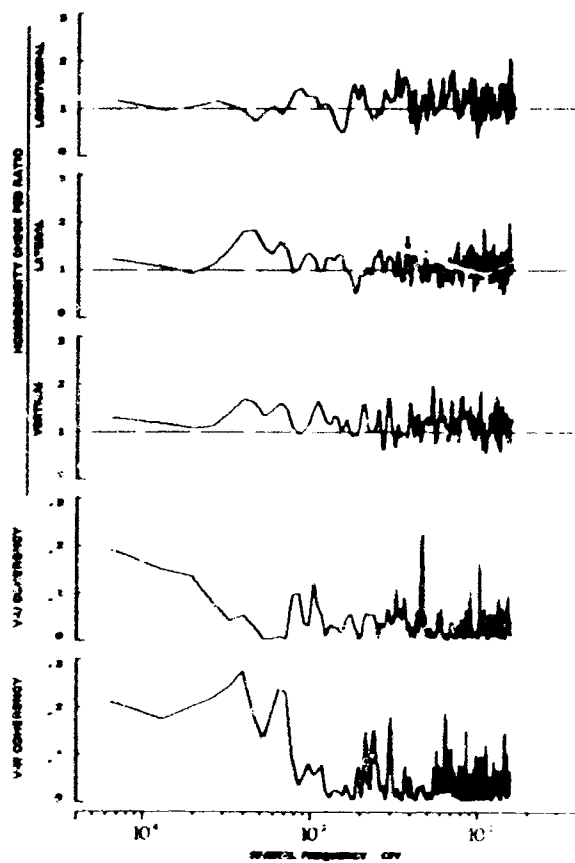
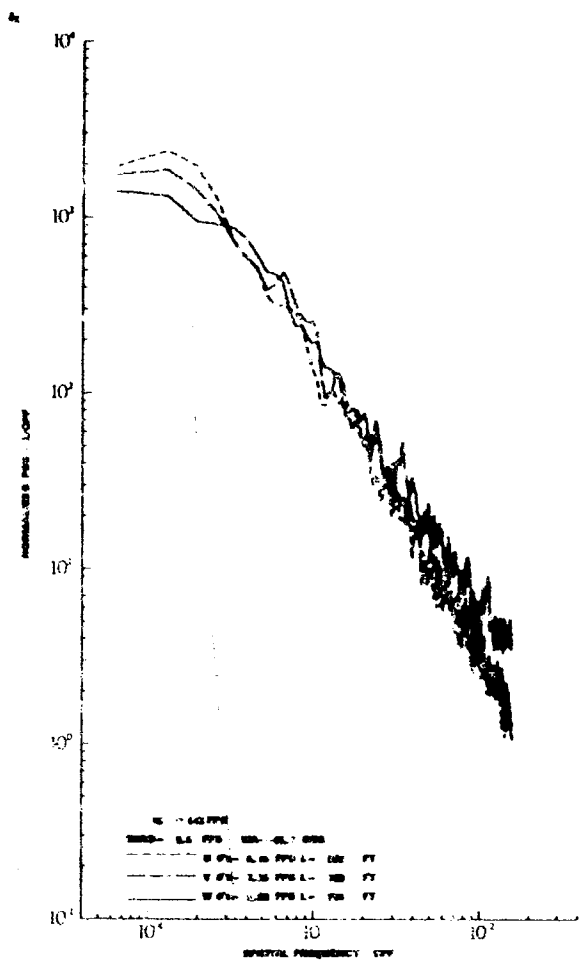
Turbulence Spectra Data For Test 226, Leg 4. Category 122113



Turbulence Spectra Data For Test 227, Leg 1, Category 122213

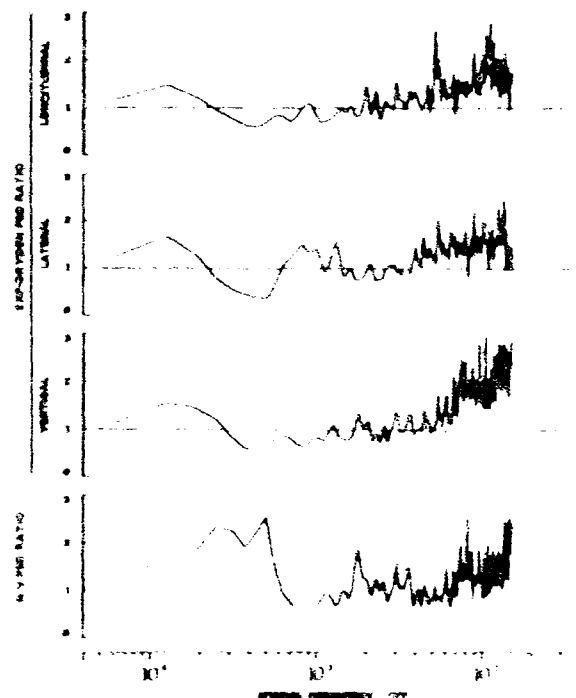
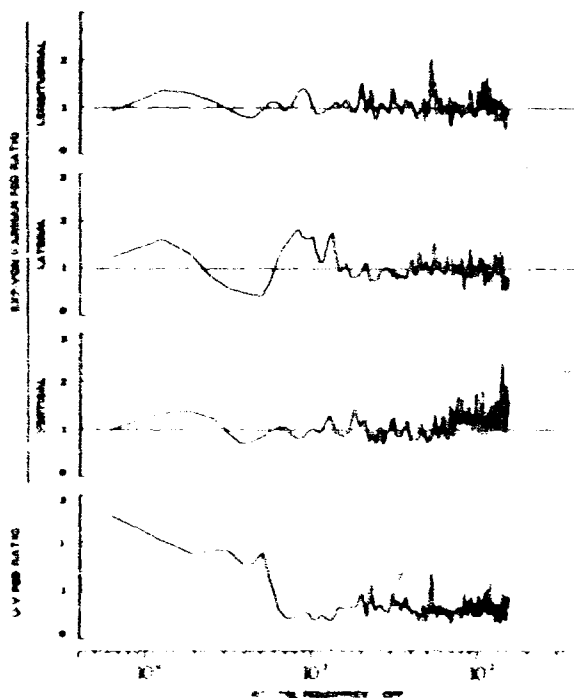
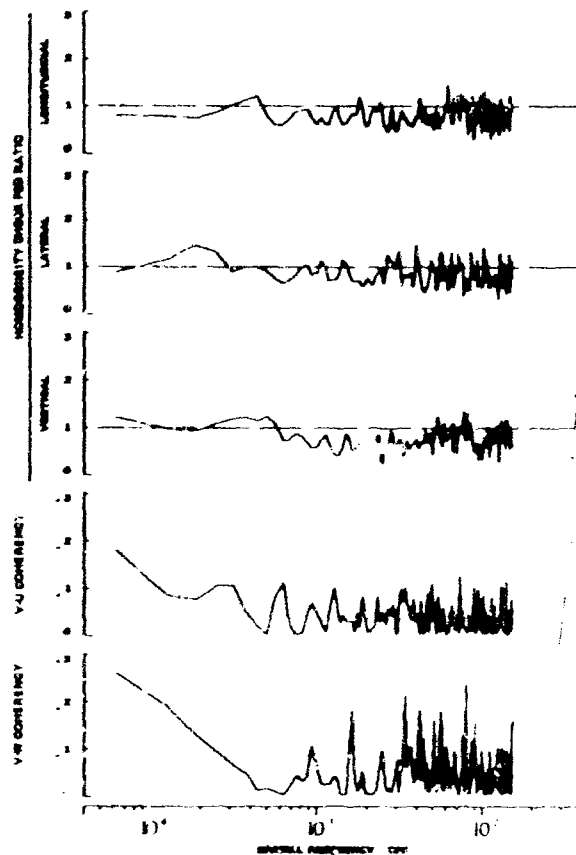
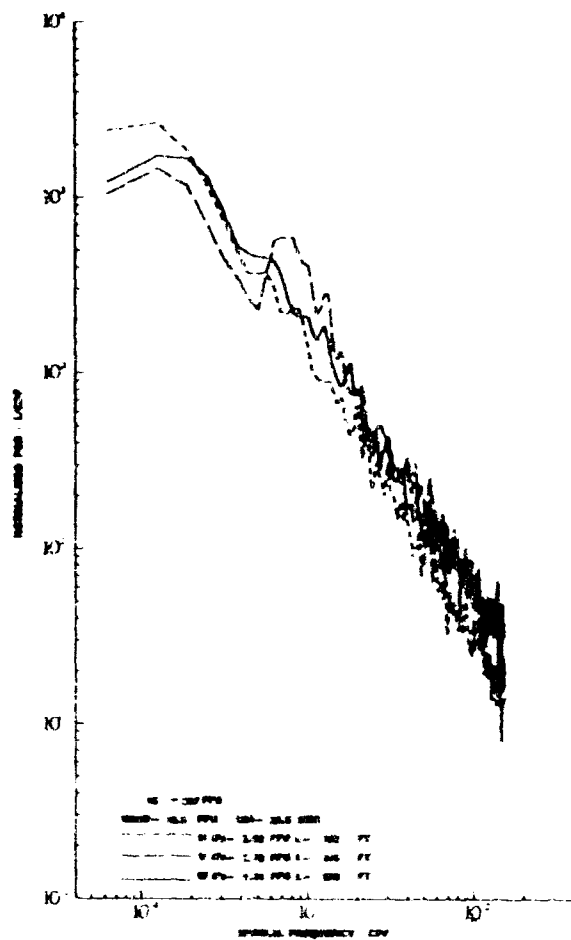


Turbulence Spectra Data For Test 227, Leg 3, Category 122213



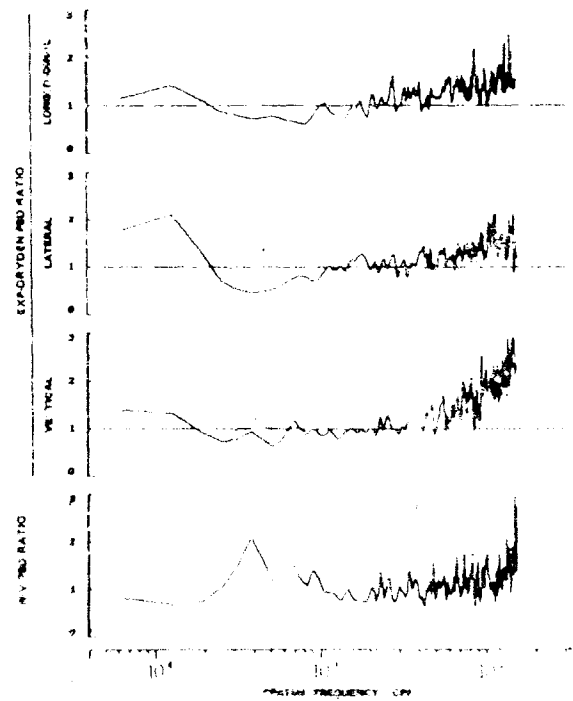
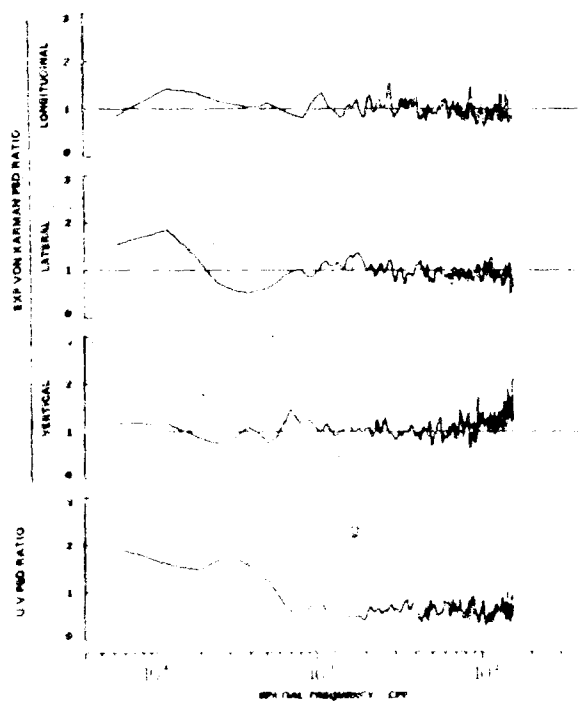
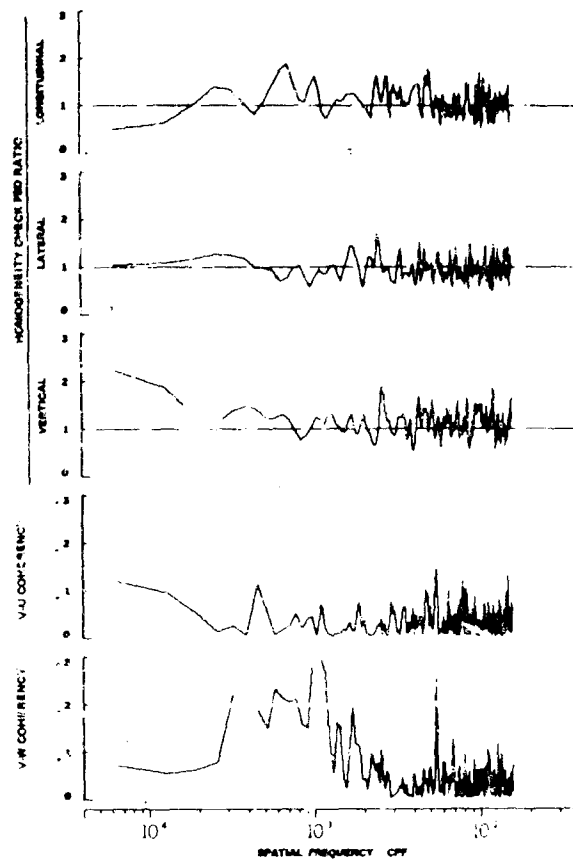
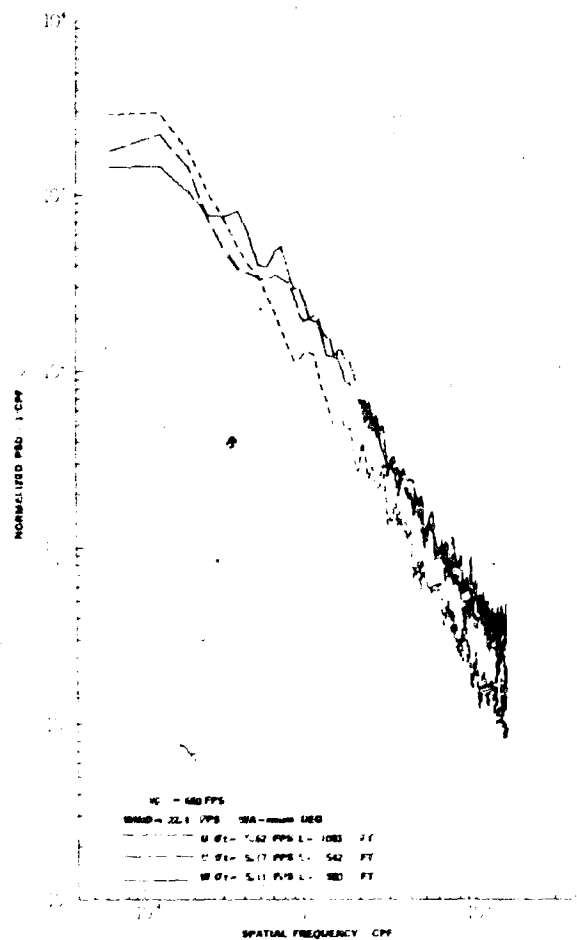
Turbulence Spectra Data For Test 227, Leg 5, Category 124213



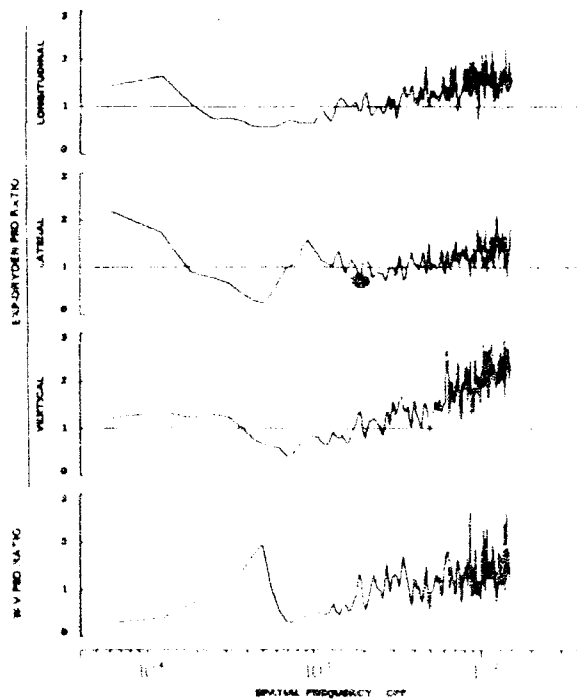
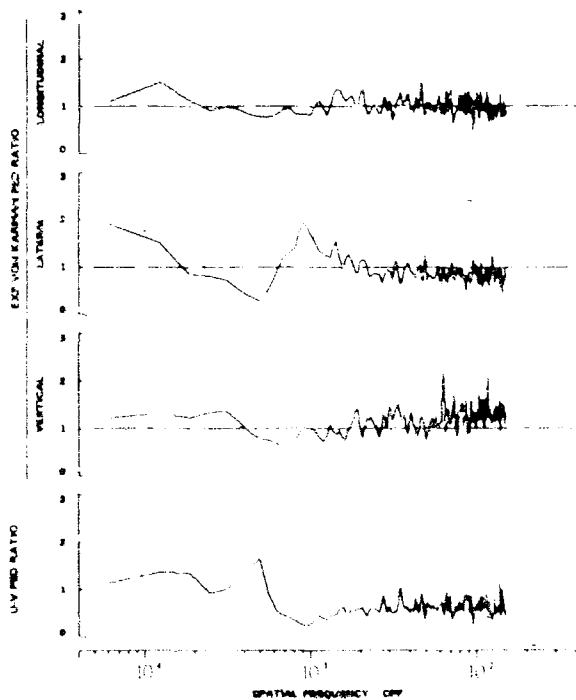
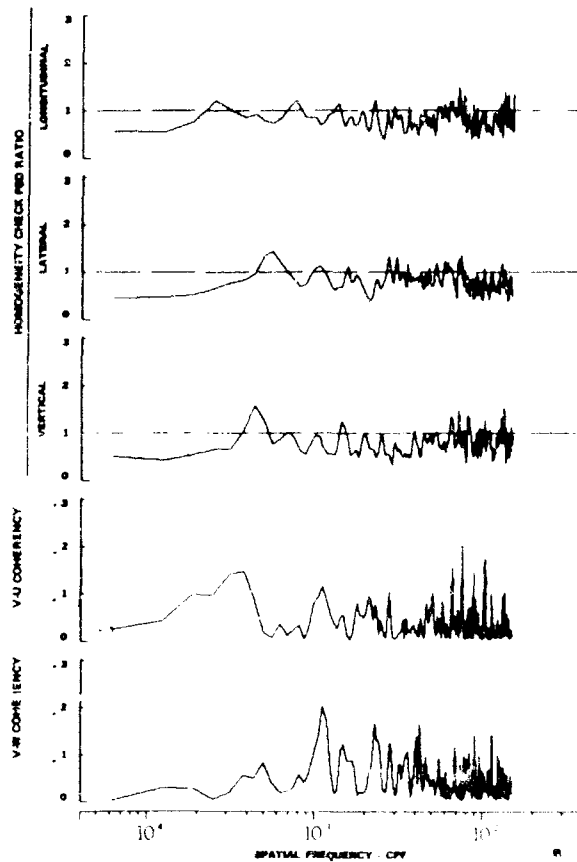
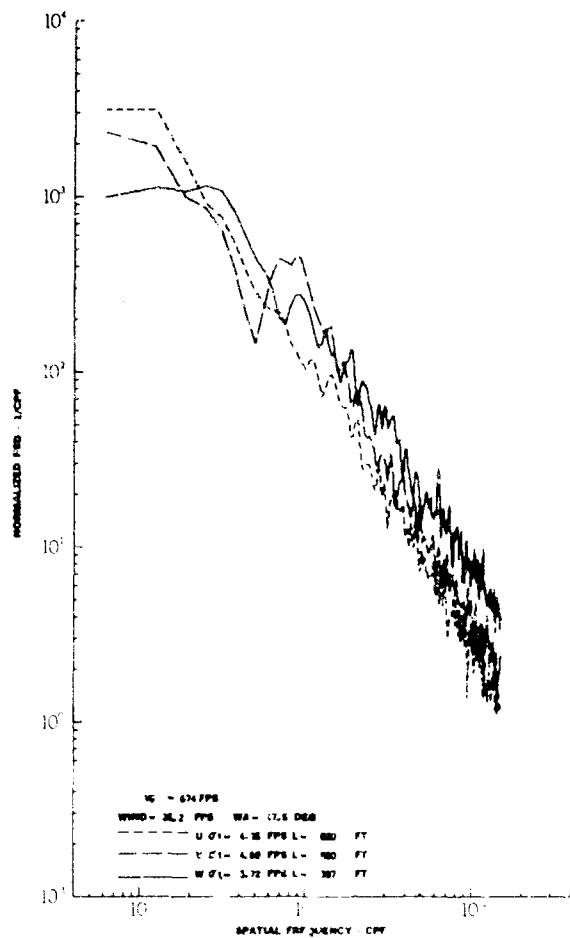


Turbulence Spectra Data for Test 227, Log 7, Category 121213

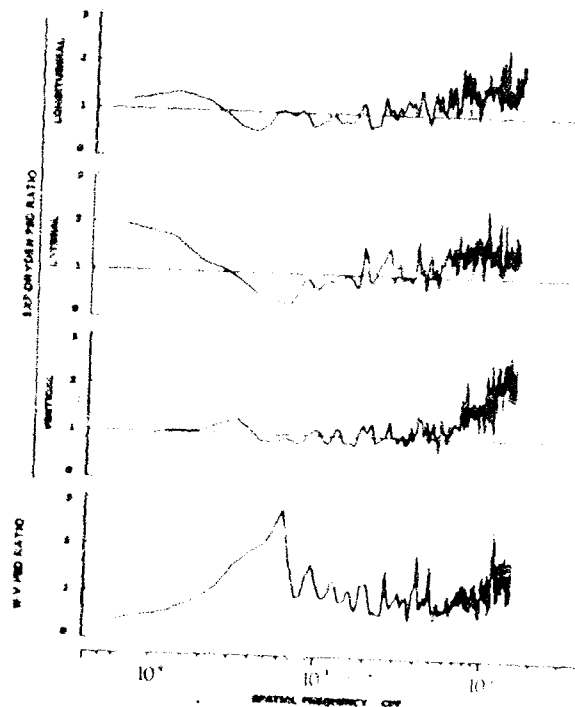
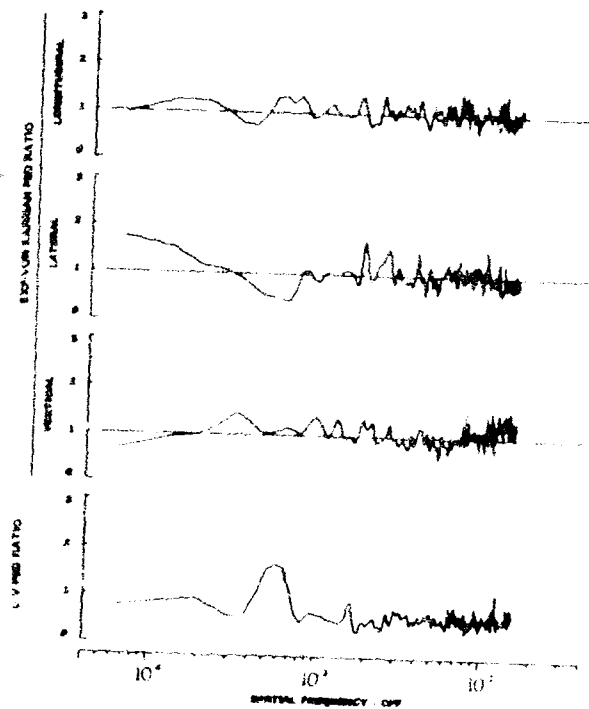
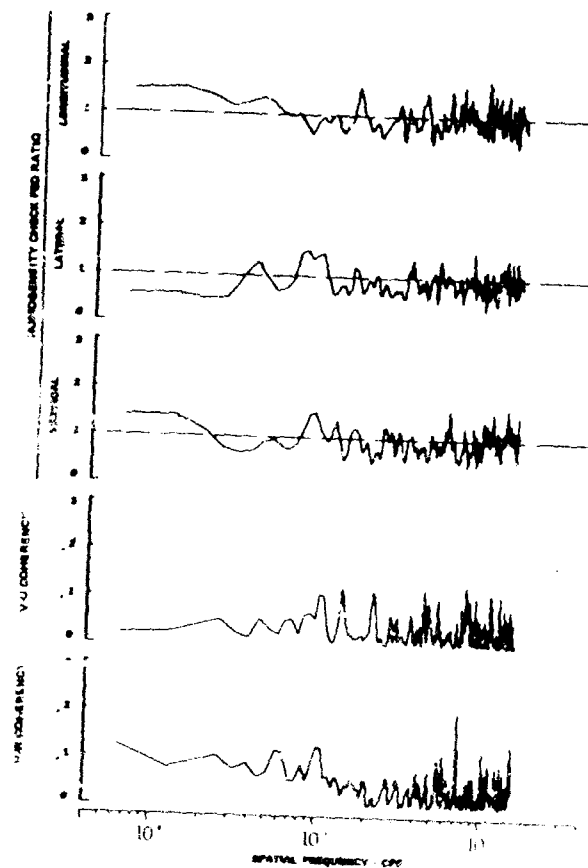
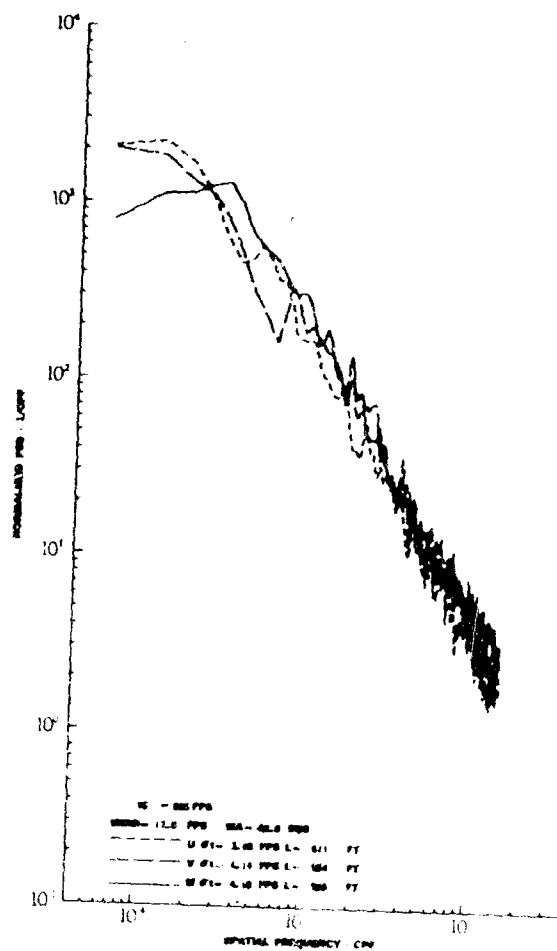




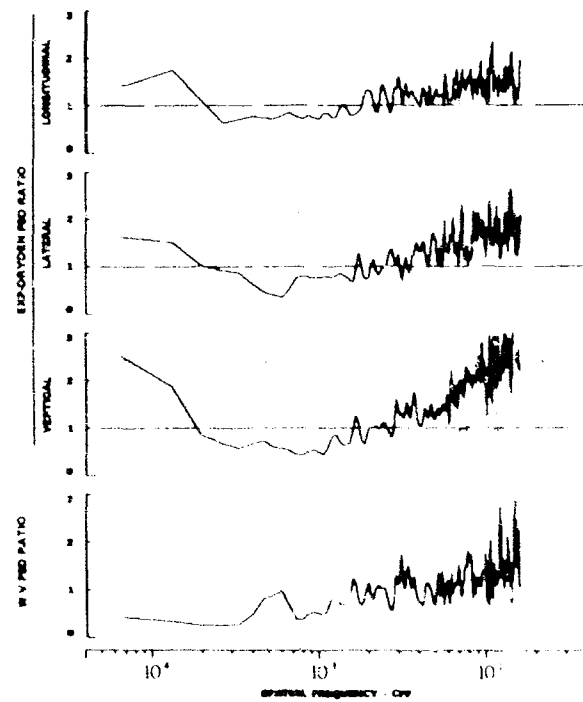
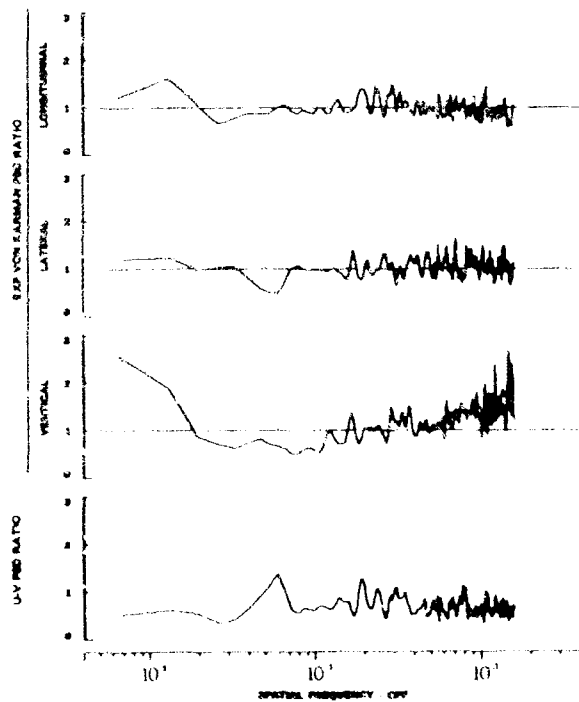
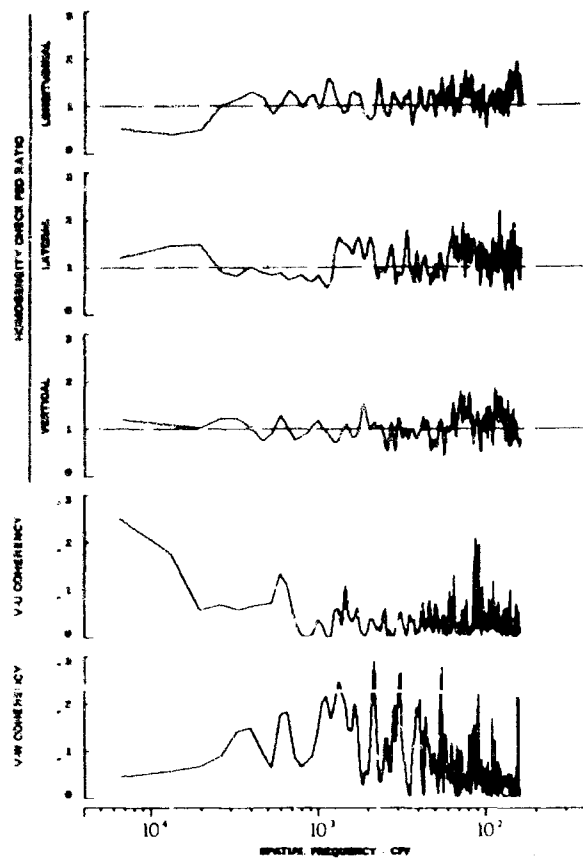
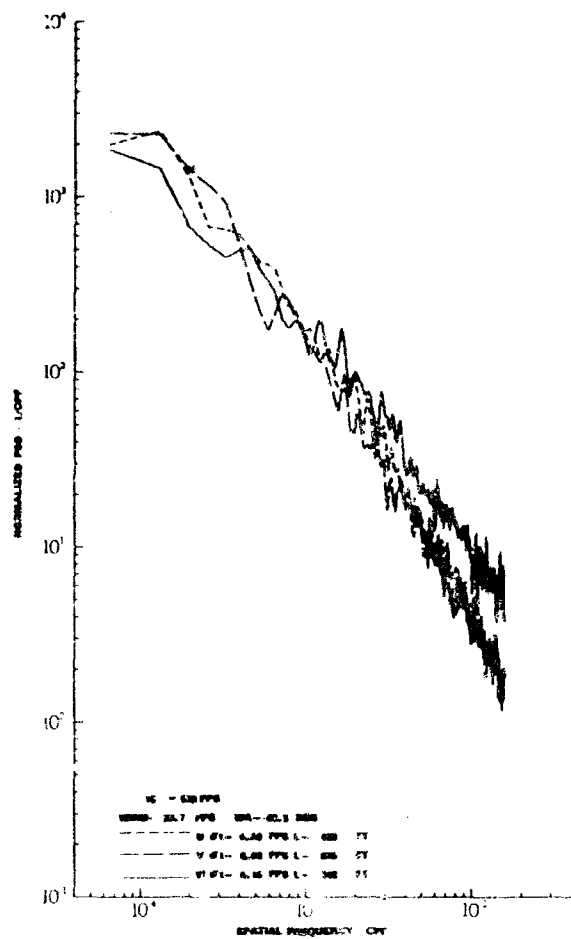
Turbulence Spectra Data For Test 228, Leg 4, Category 124313



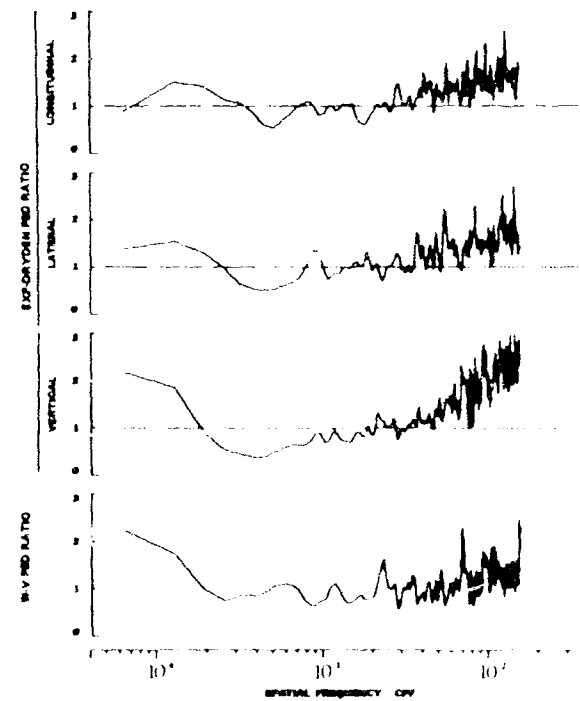
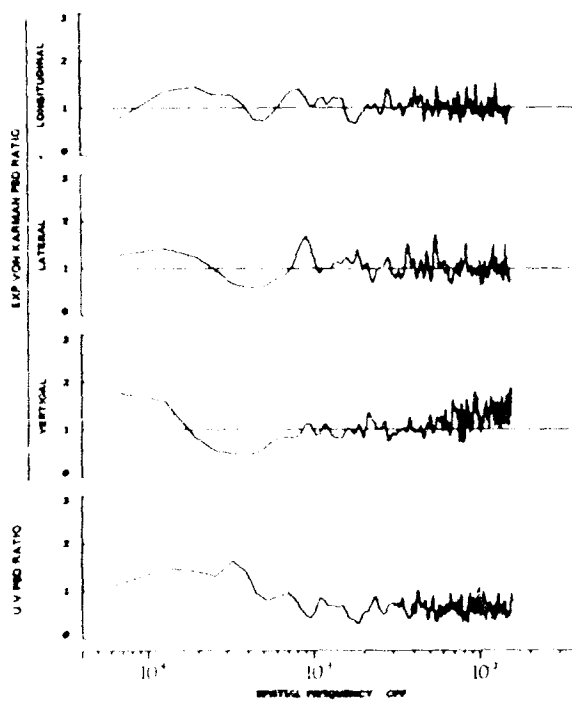
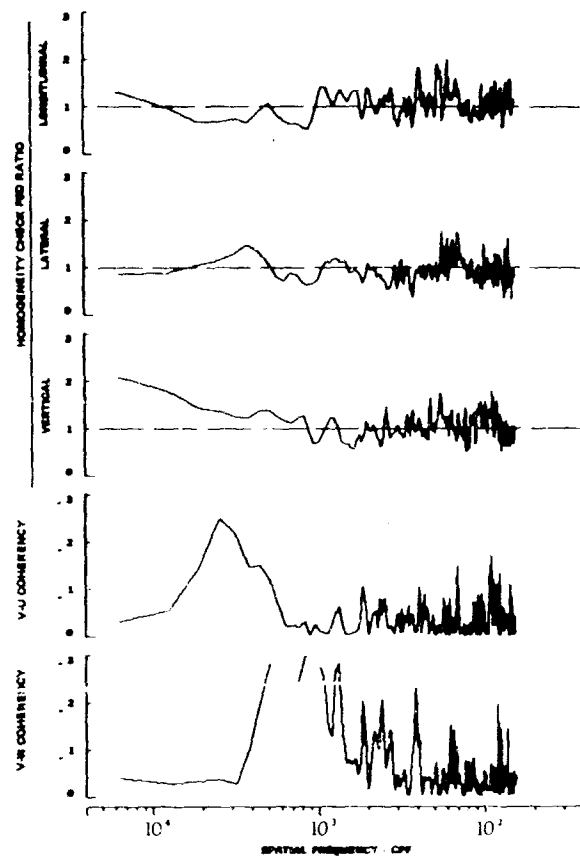
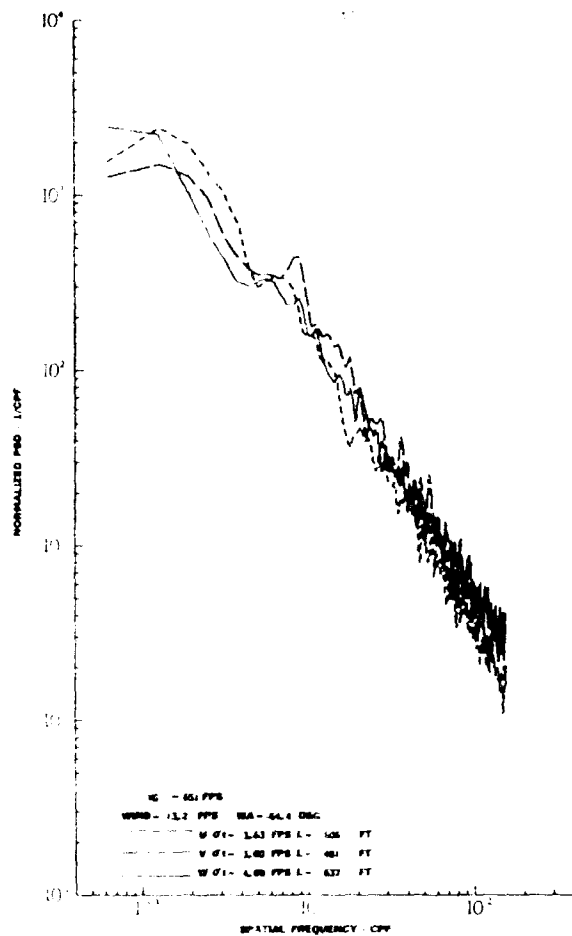
Turbulence Spectra Data For Test 228, Leg 6, Category 123313



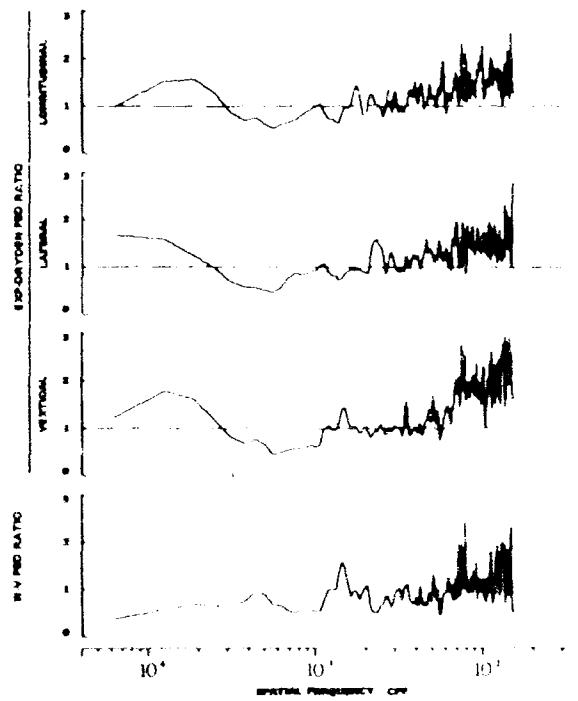
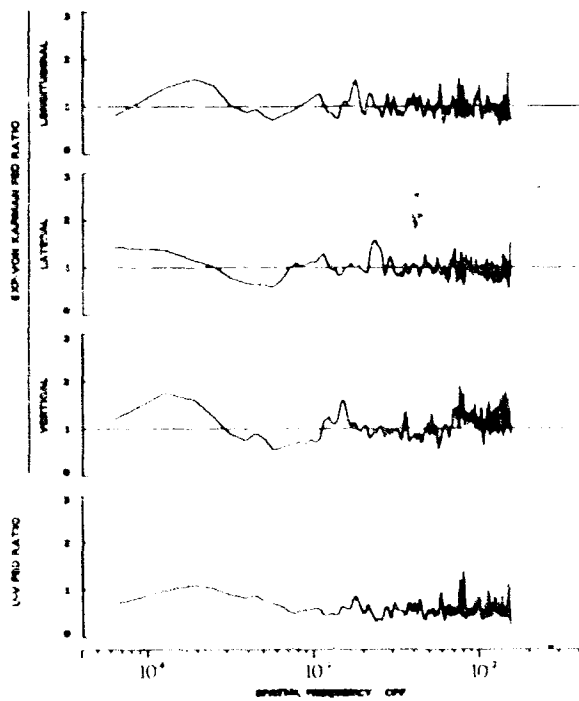
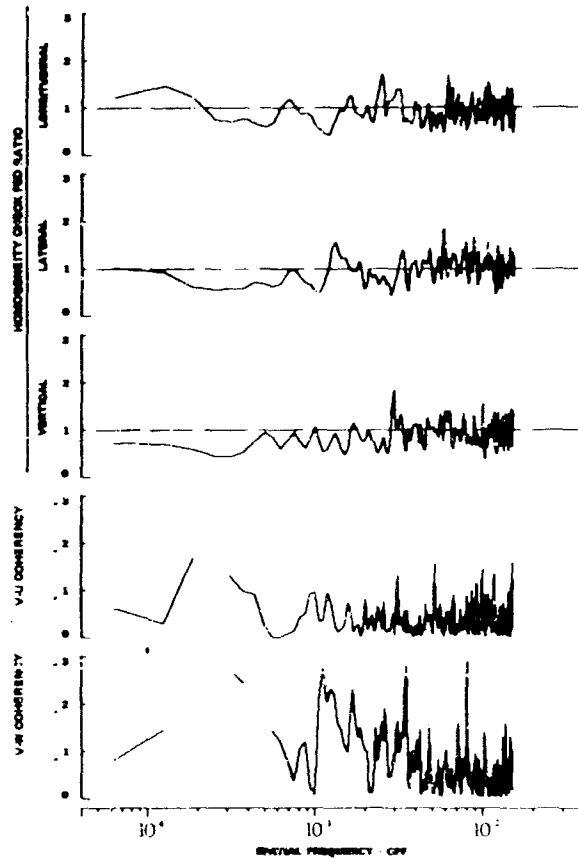
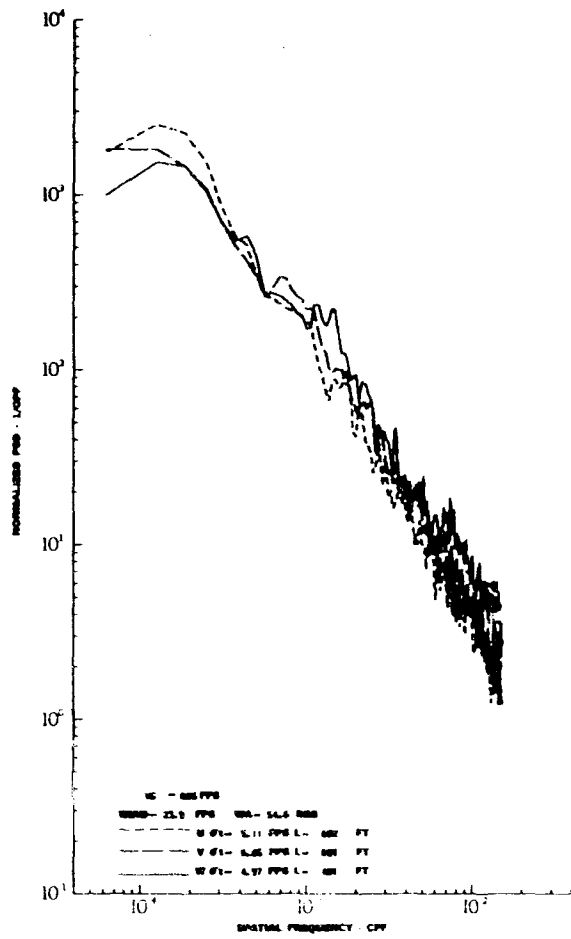
Turbulence Spectra Data For Test 228, Leg 8, Category 423313



Turbulence Spectra Data For Test 229, Lag 5, Category 112113

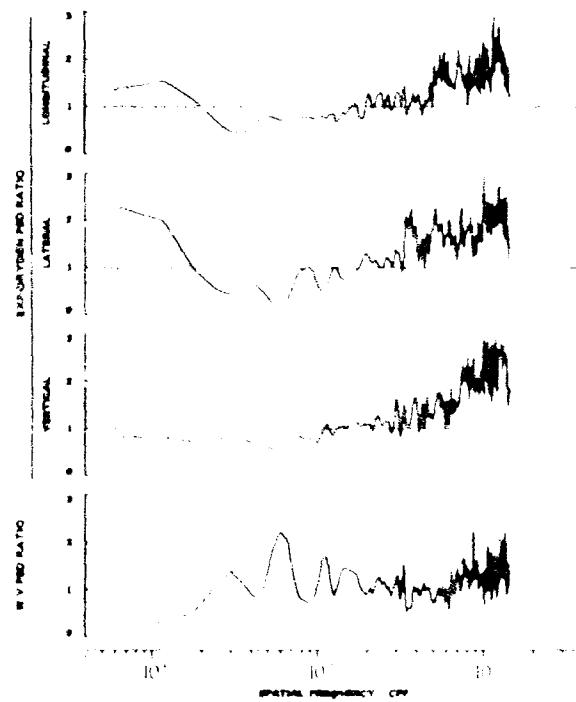
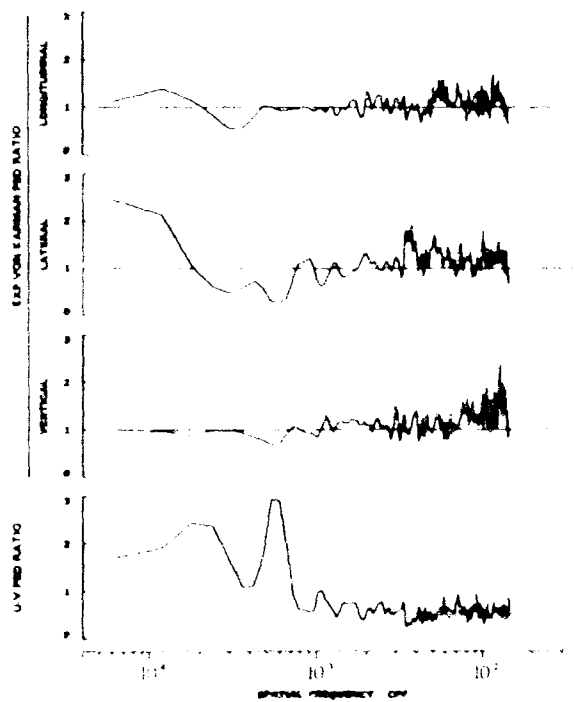
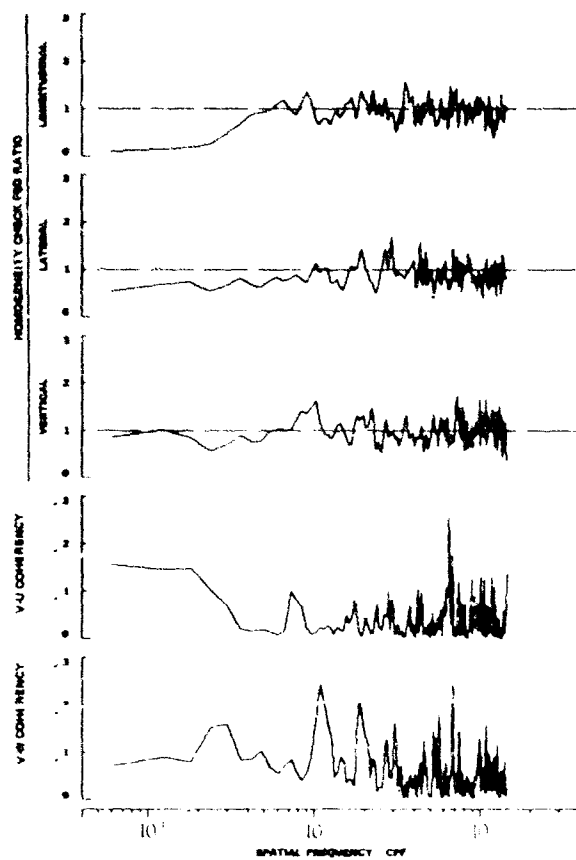


Turbulence Spectra Data For Test 230, Leg 4, Category 113213



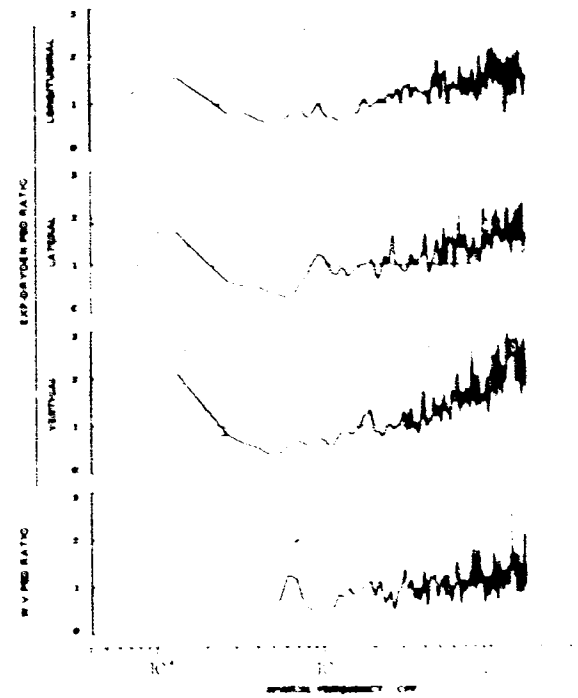
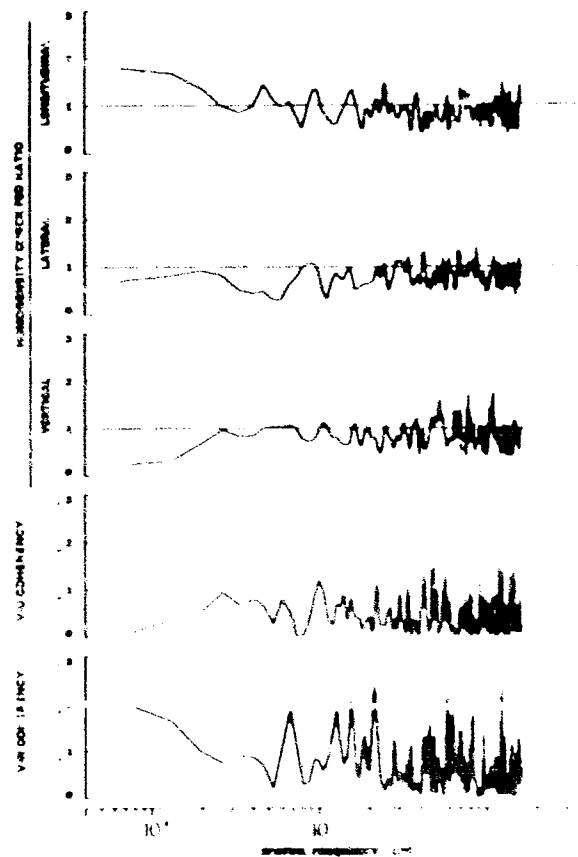
Turbulence Spectra Data For Test 230, Leg 6, Category 113213



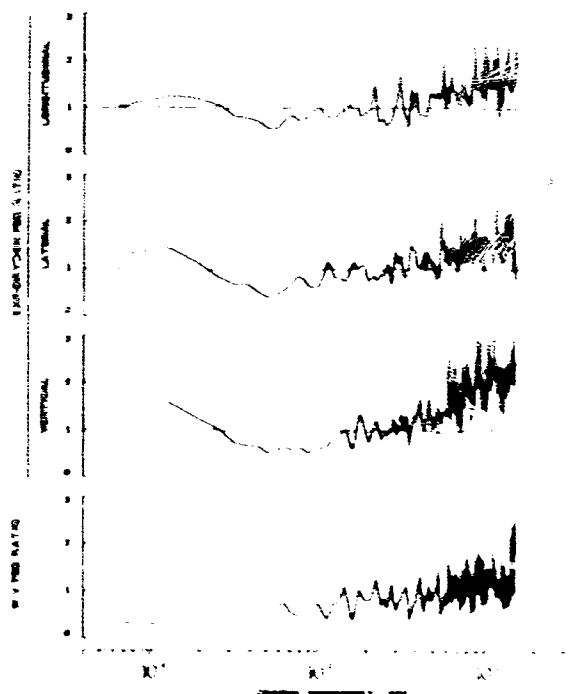
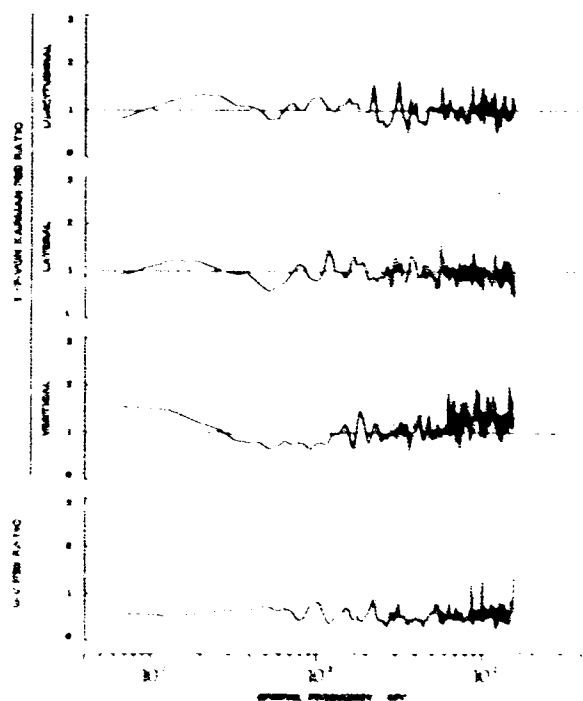
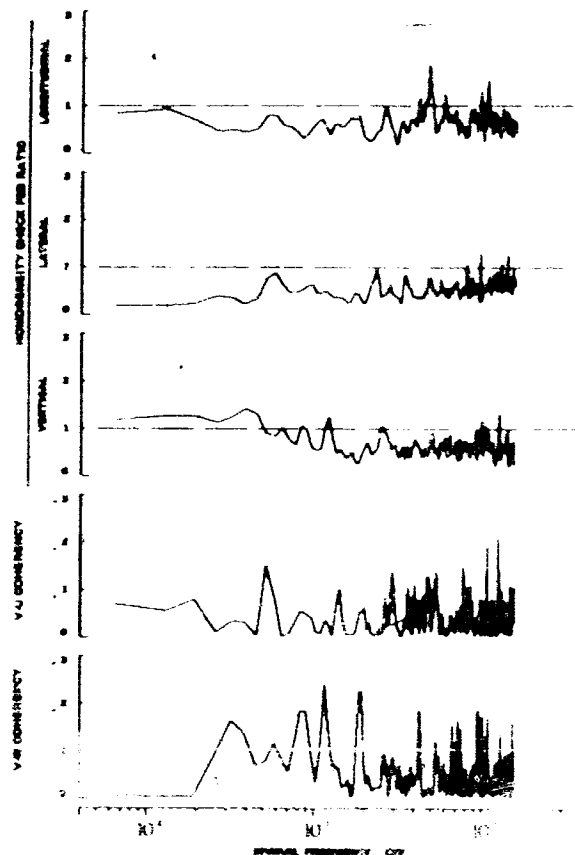


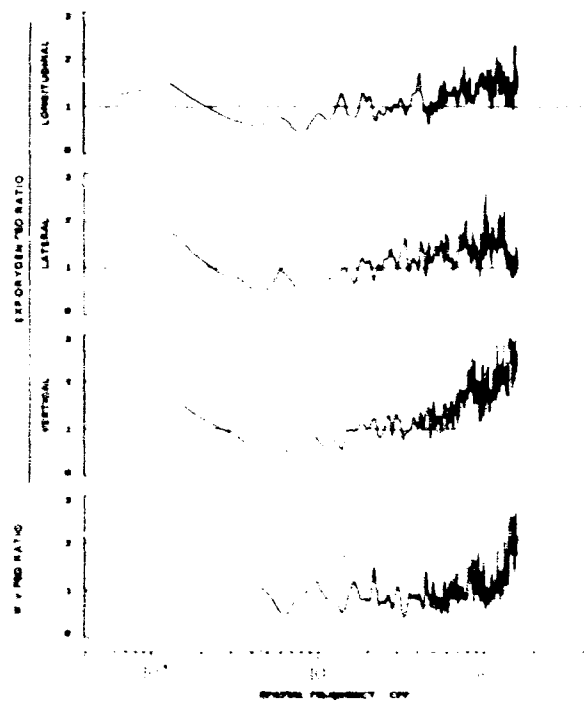
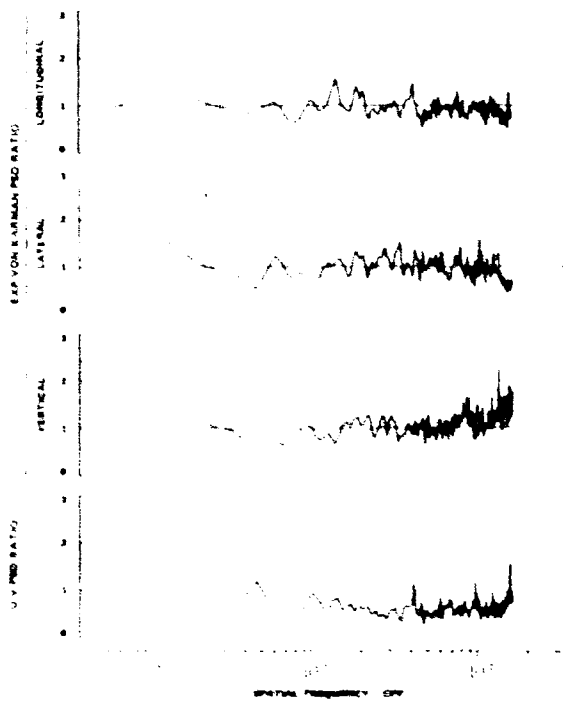
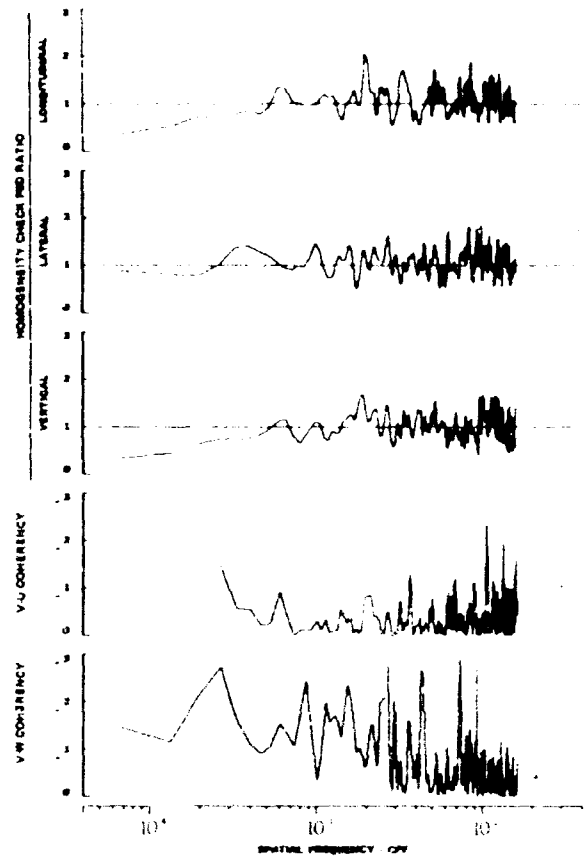
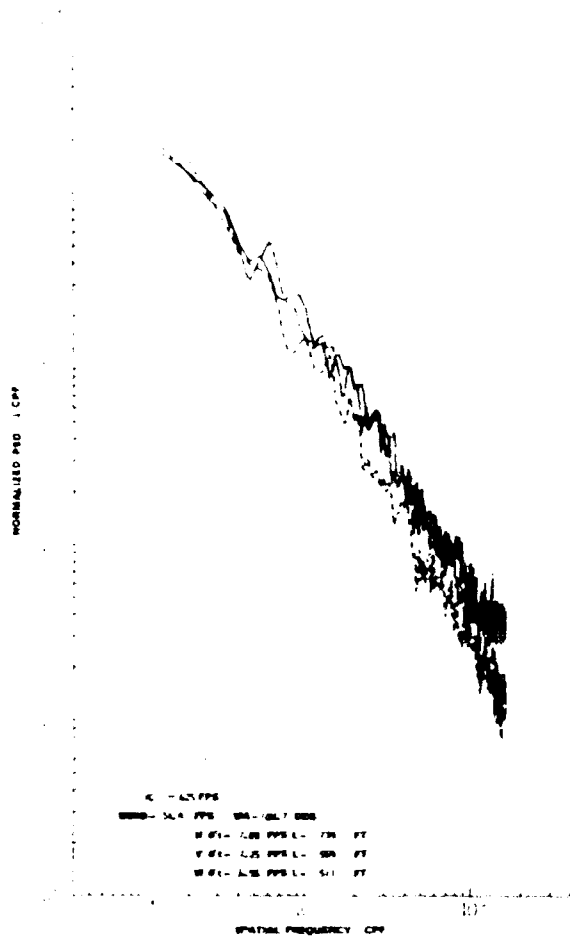




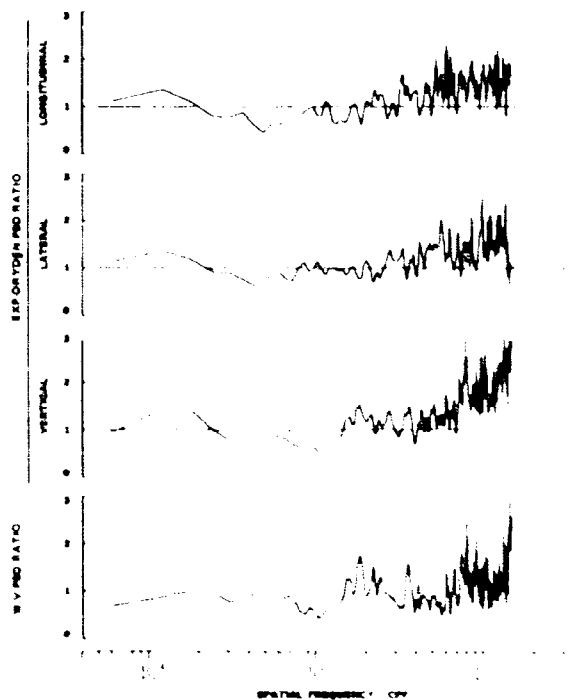
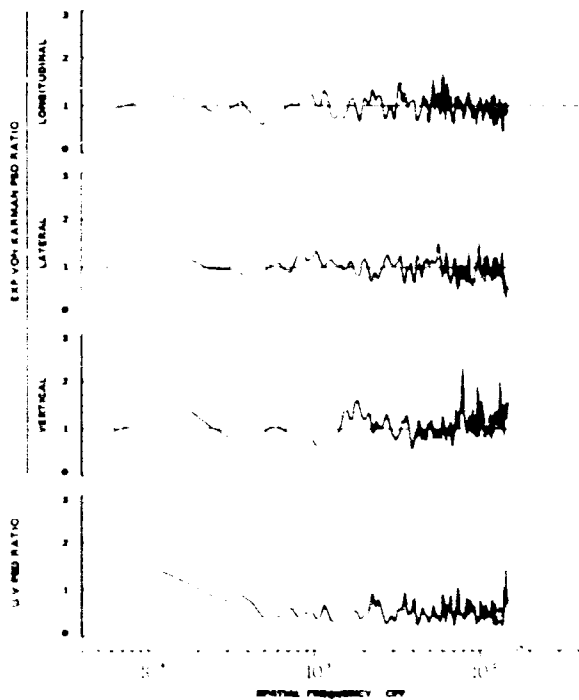
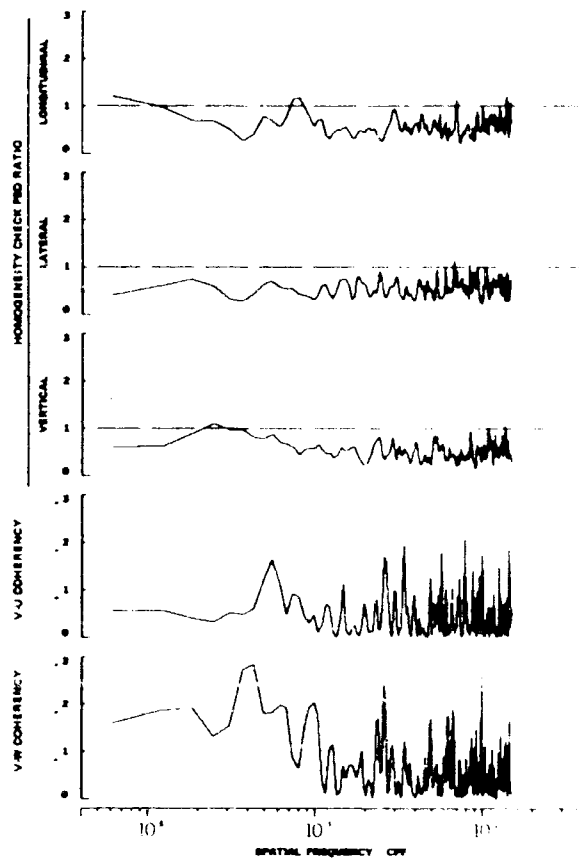
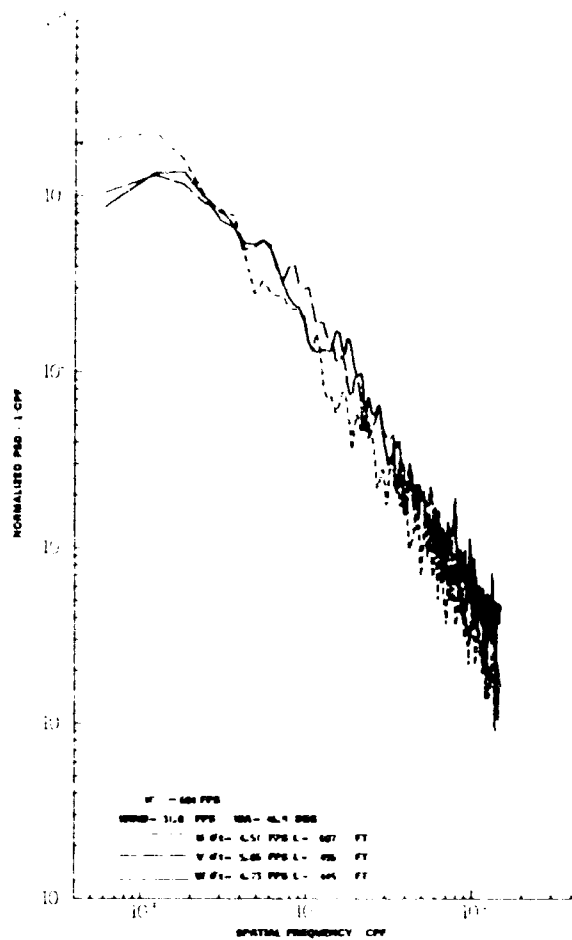






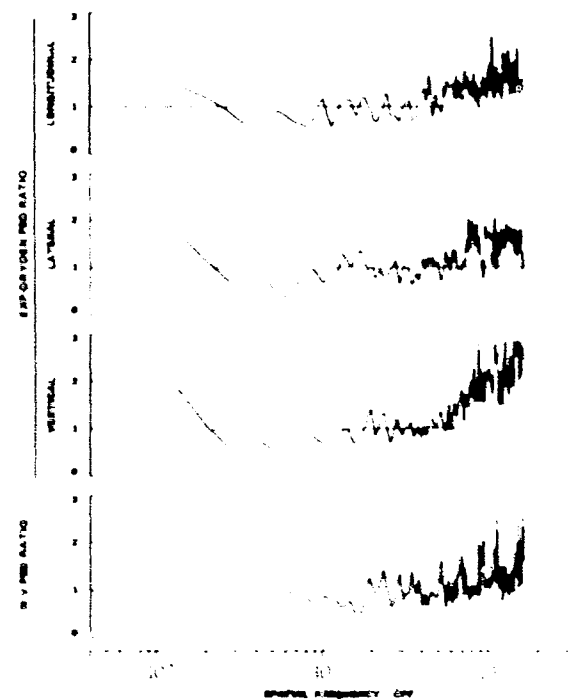
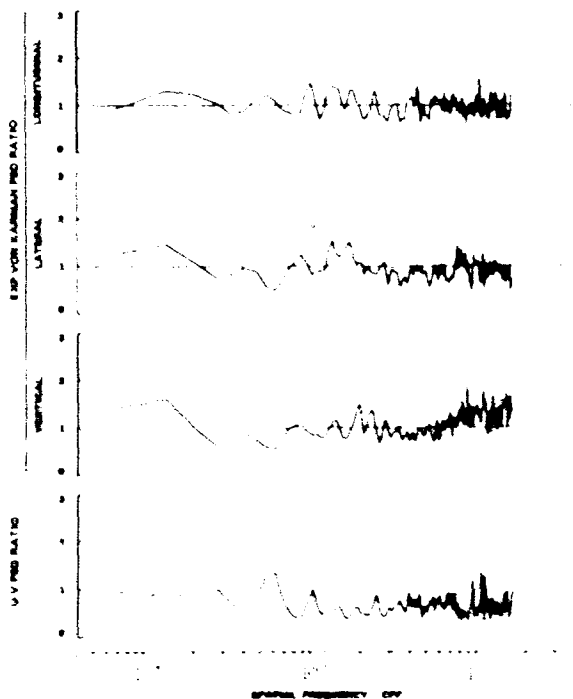
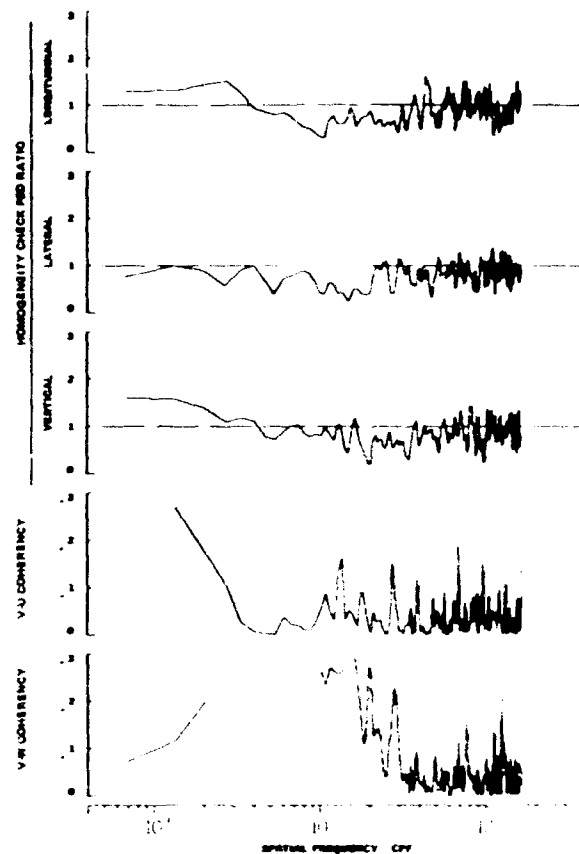
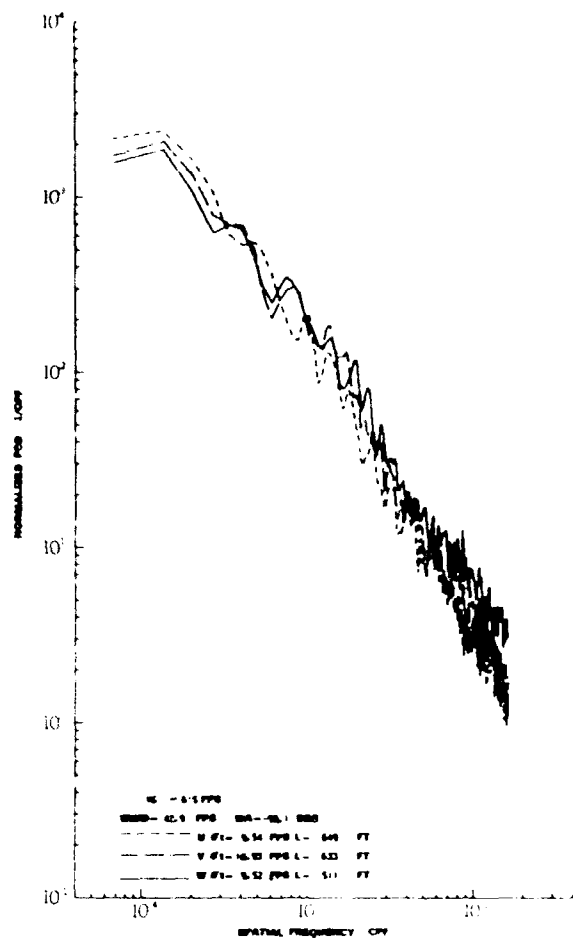


Turbulence Spectra Data For Test 233, Leg 1, Category 1232:2



Turbulence Spectra Data For Test 233, Leg 3, Category 3213

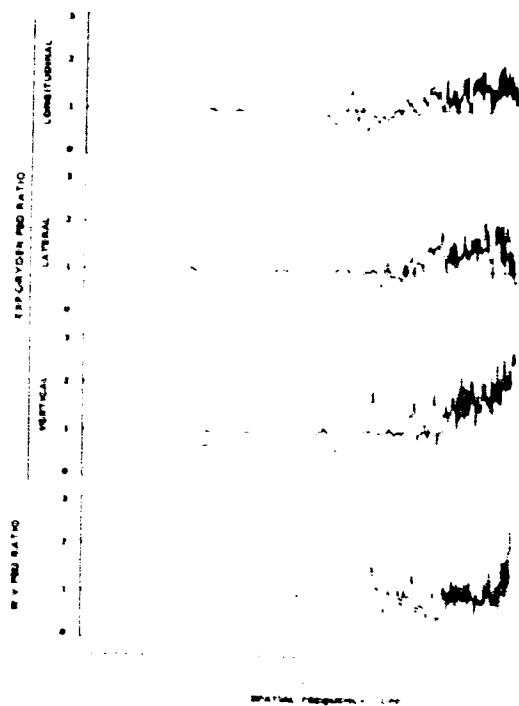
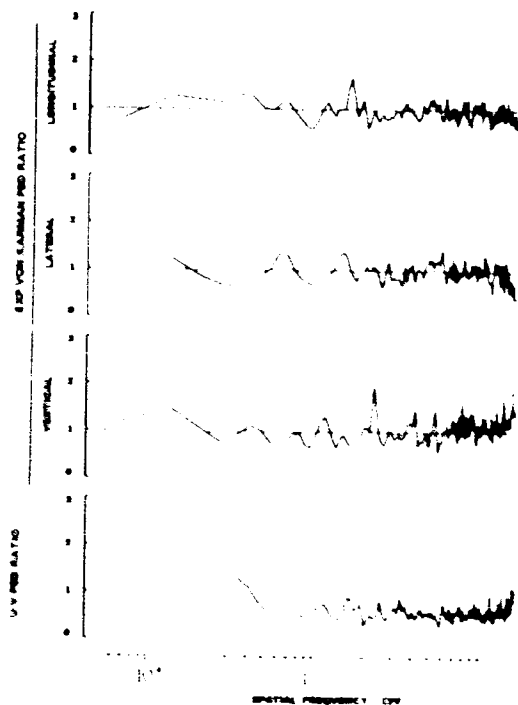
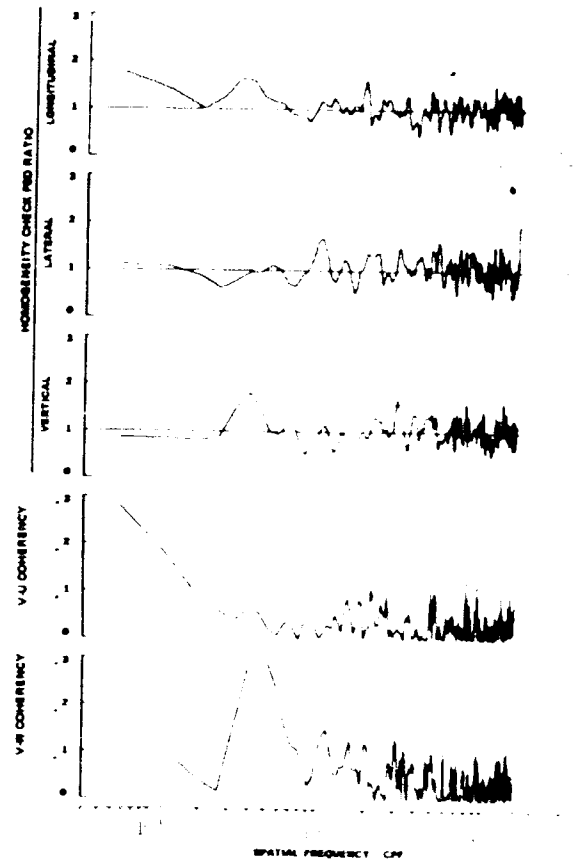
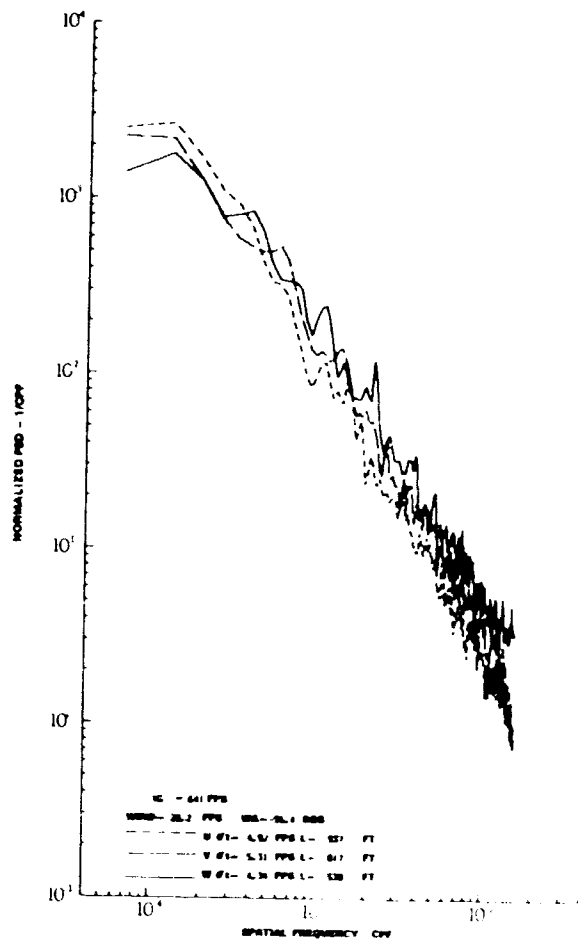




Turbulence Spectra Data for Test 233, Leg 5, Category 123213

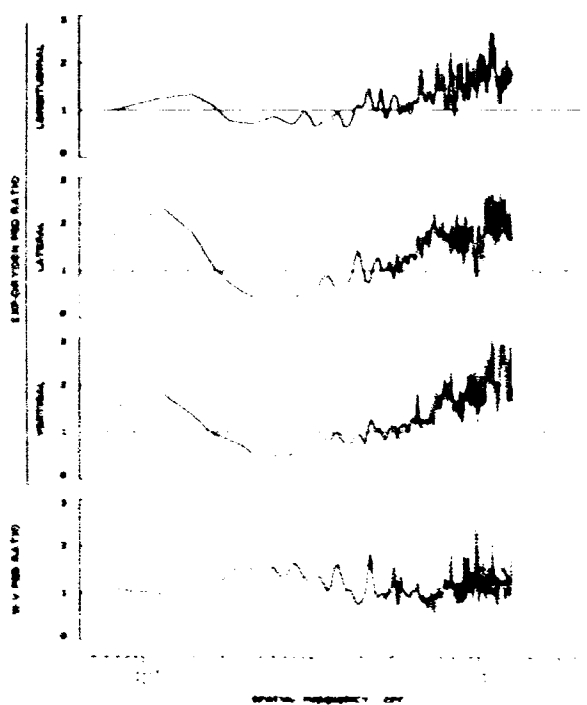
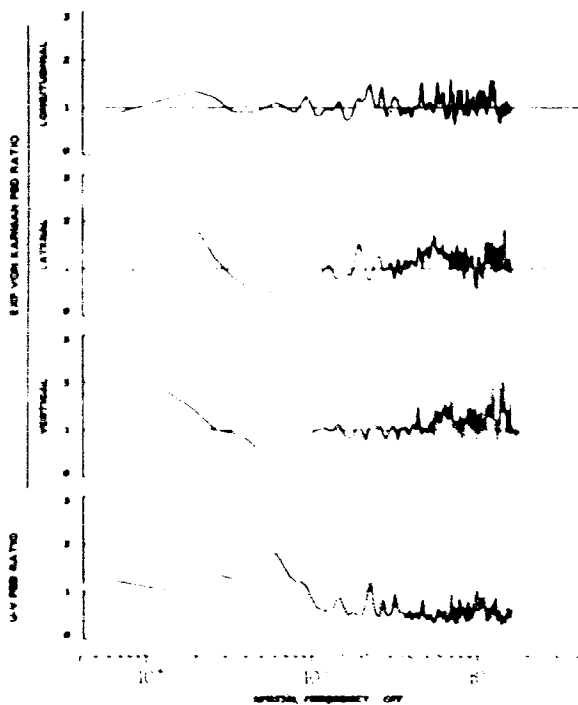
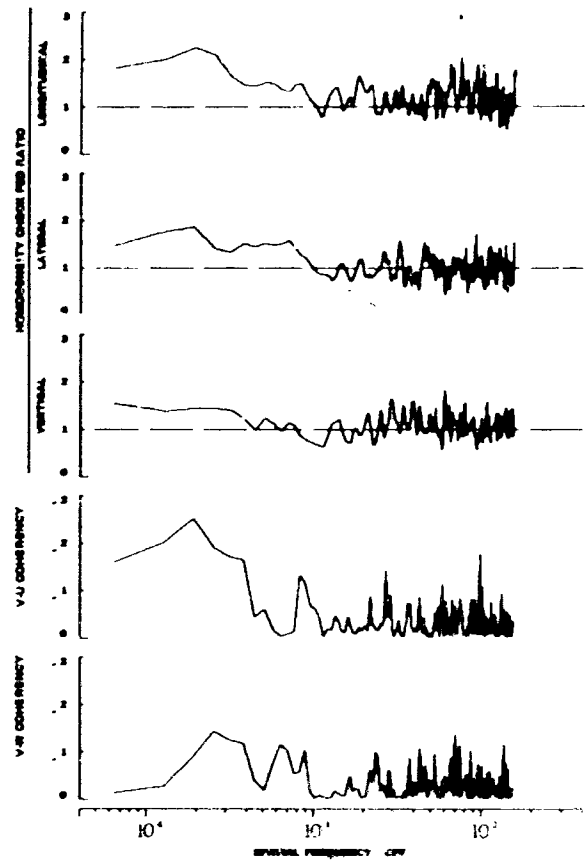
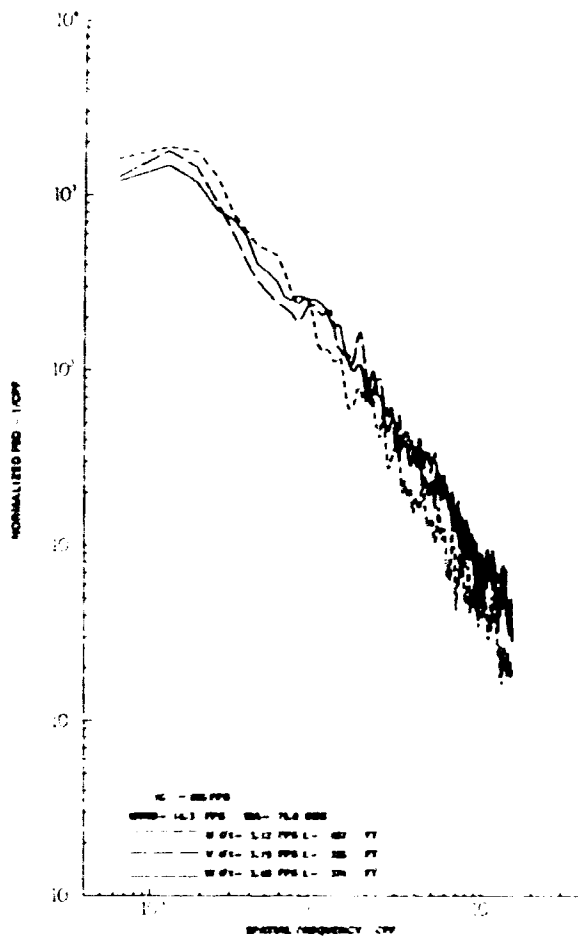






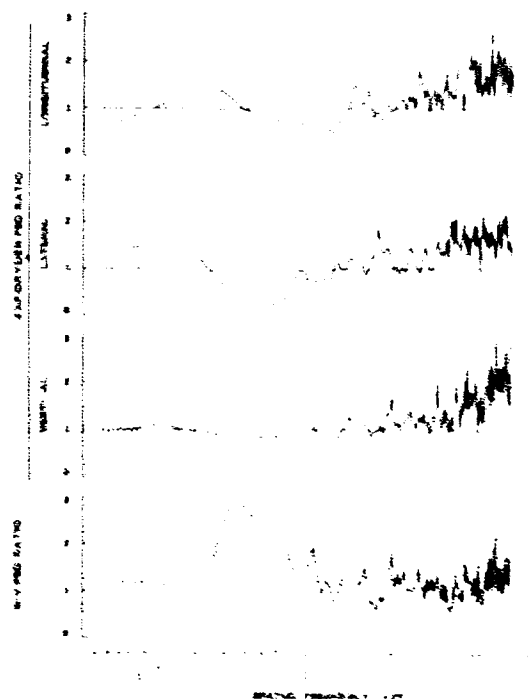
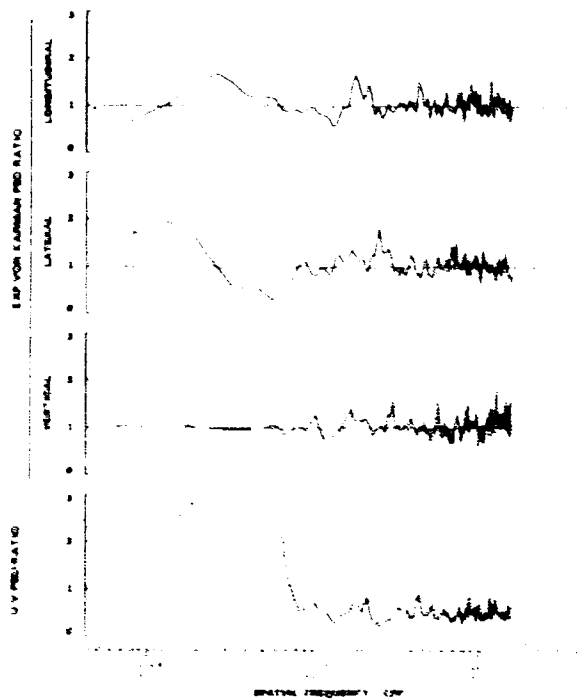
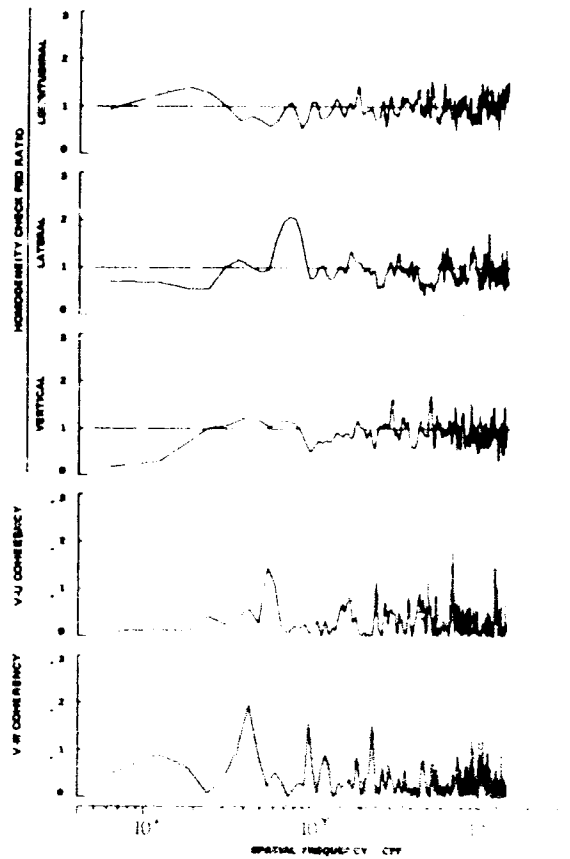
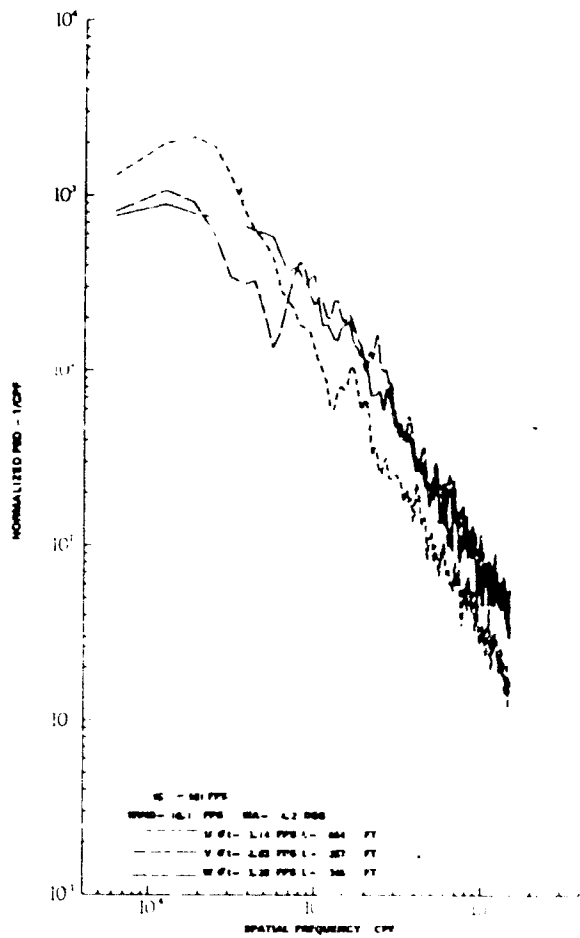
Turbulence Spectra Data For Test 234, Leg 4, Category 122313





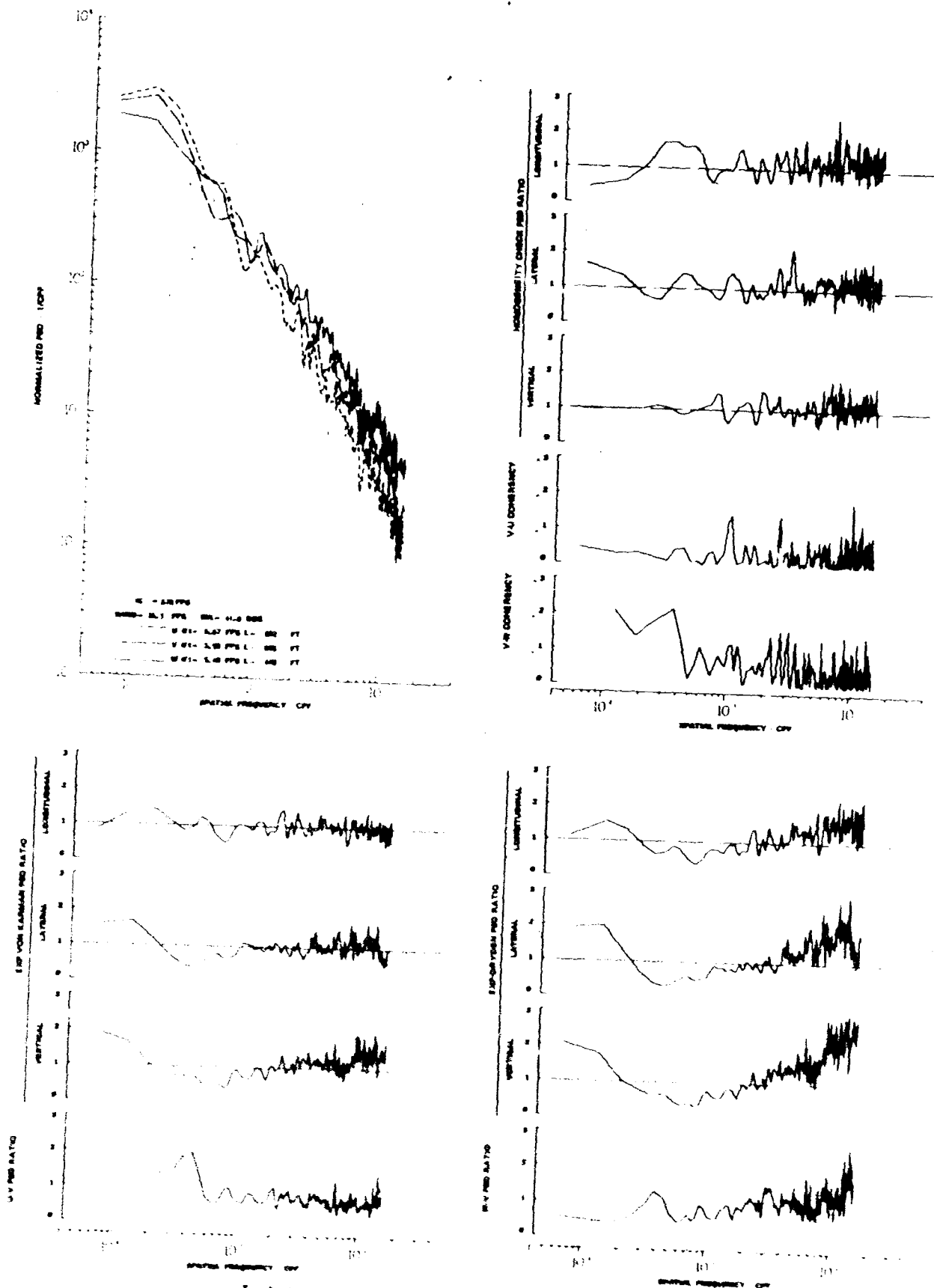
Turbulence Spectra Data for Test 236, Leg 4, Category 114211





Turbulence Spectra Data For Test 236, Seq 8, Category 413011



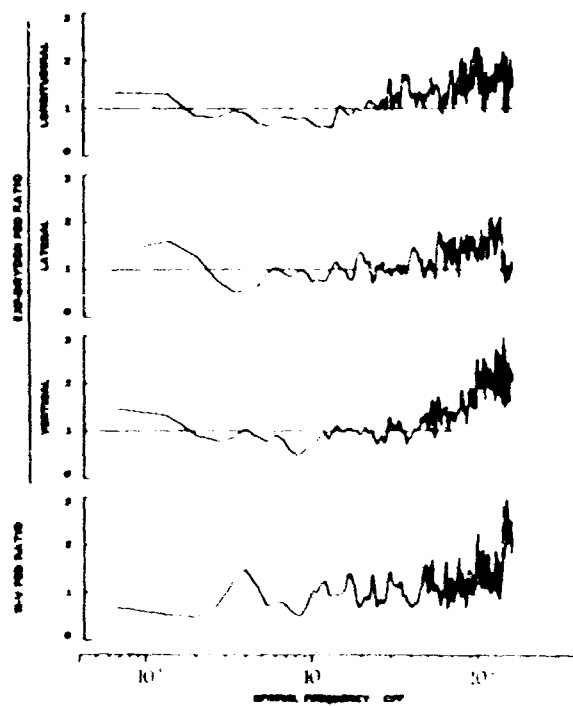
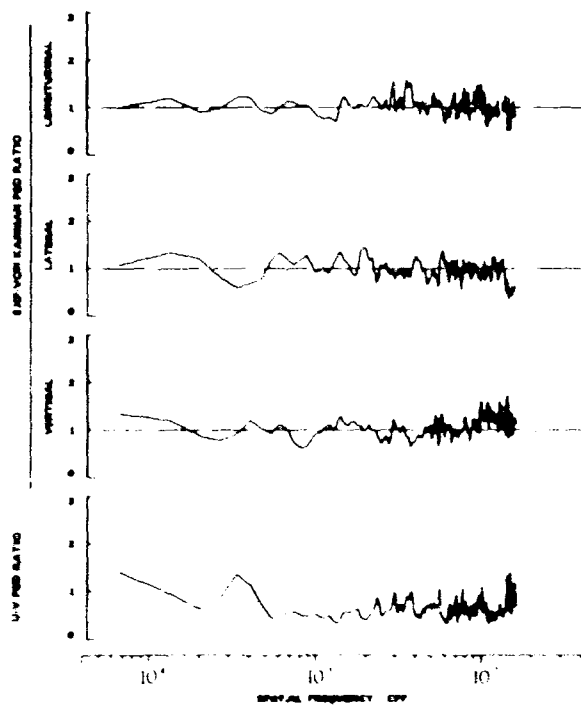
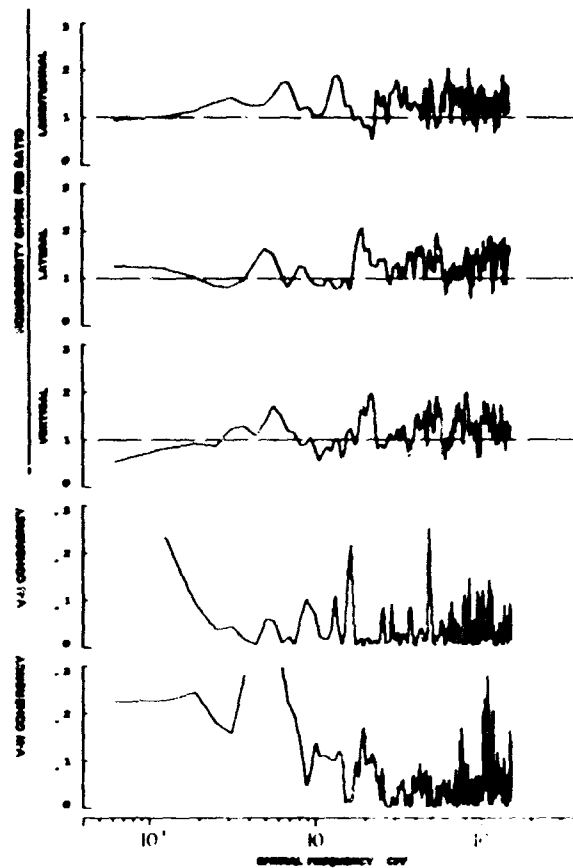
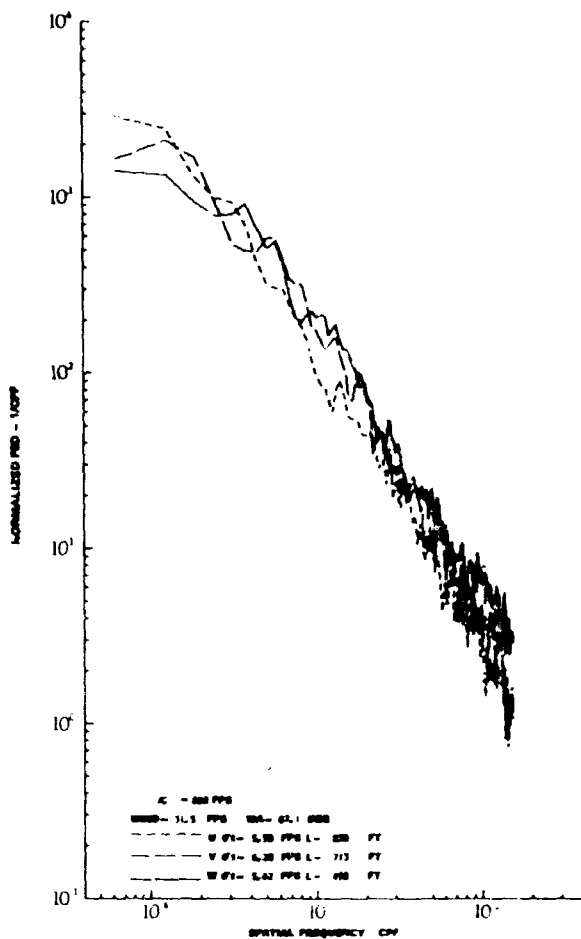


Turbulence Spectra Data For Test 237, Log 1, Category 113313

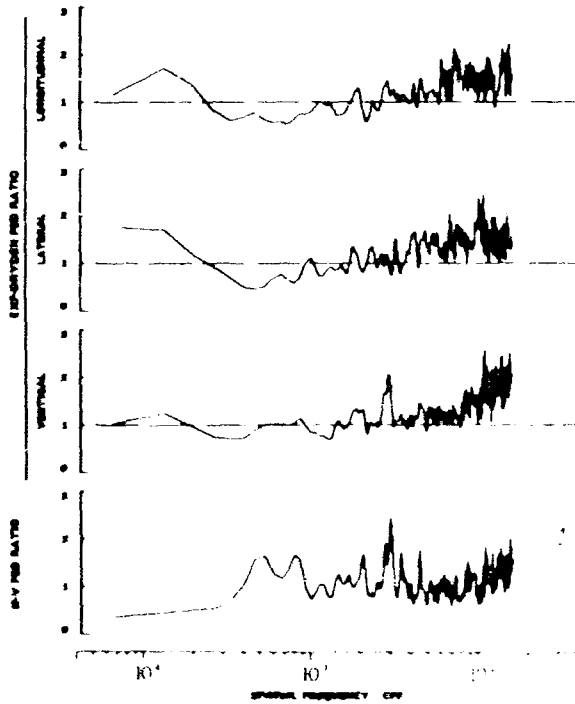
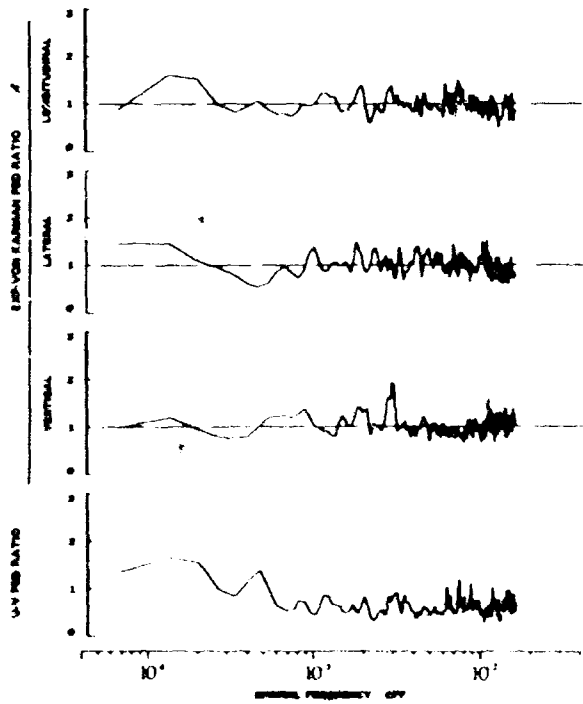
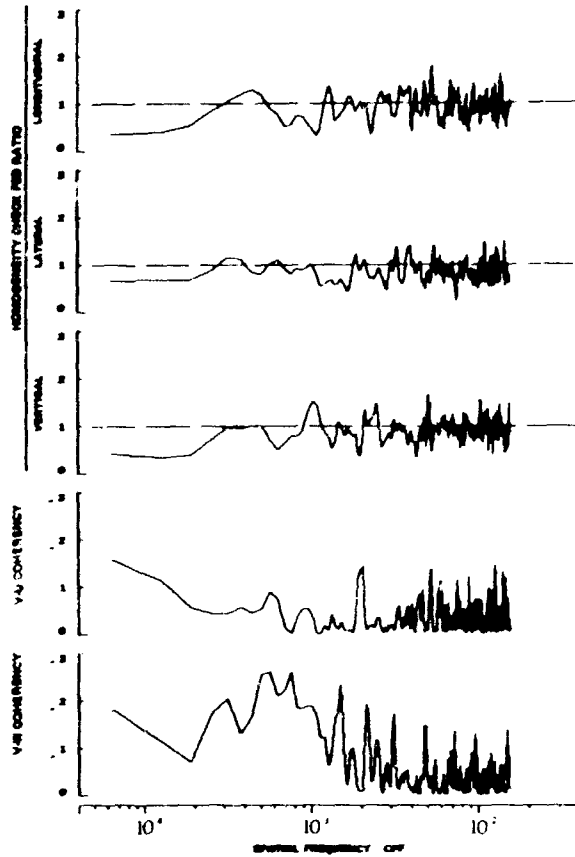
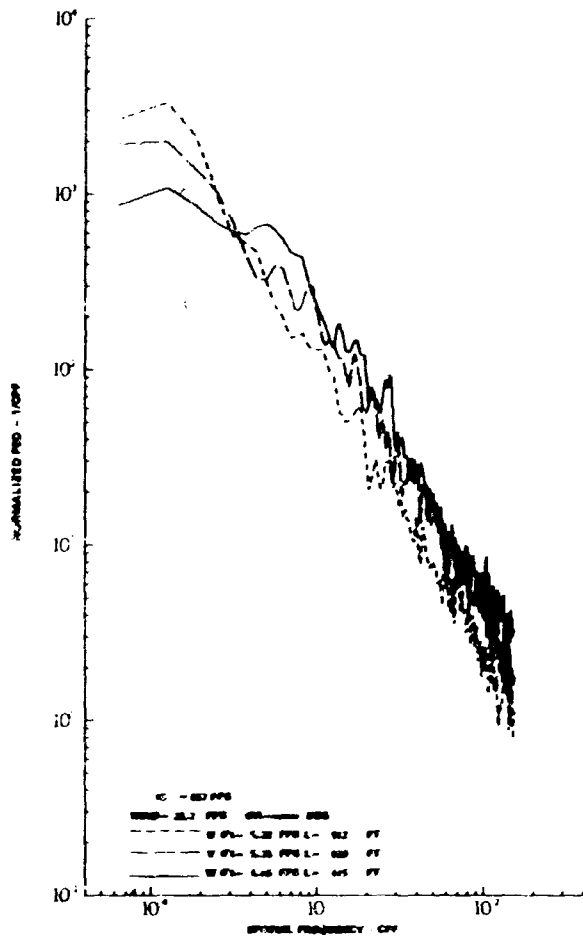




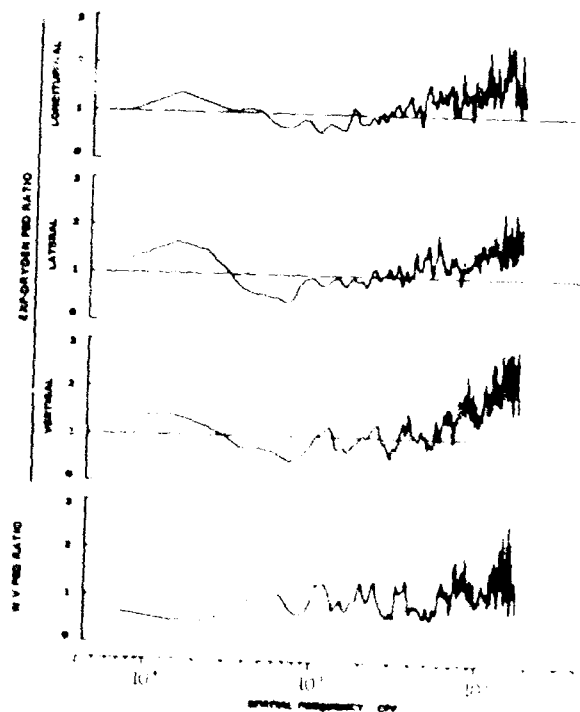
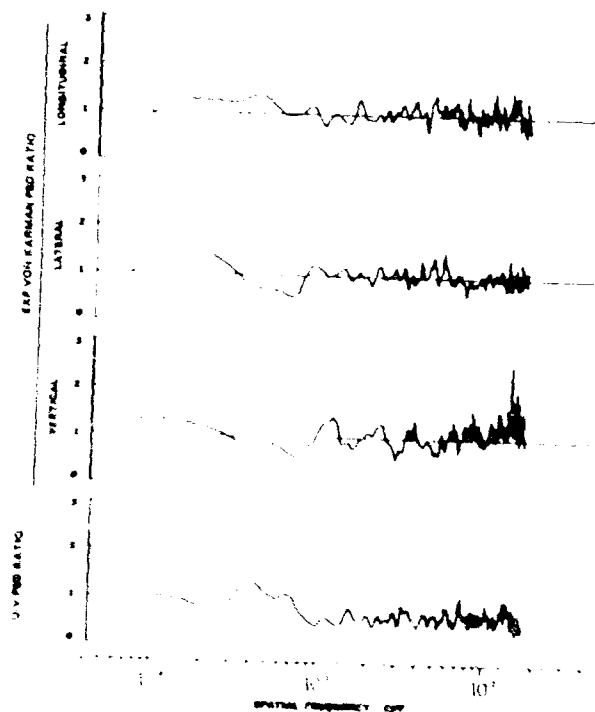
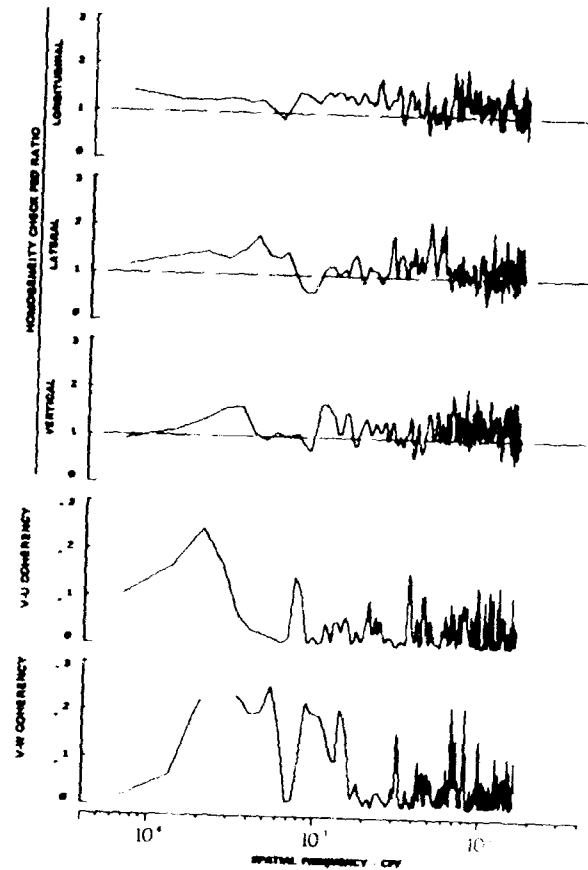
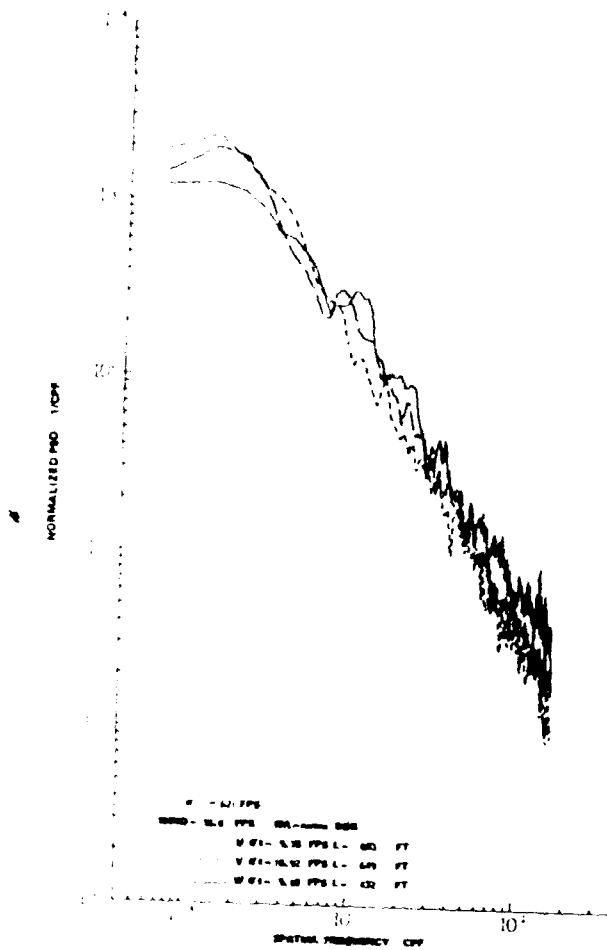




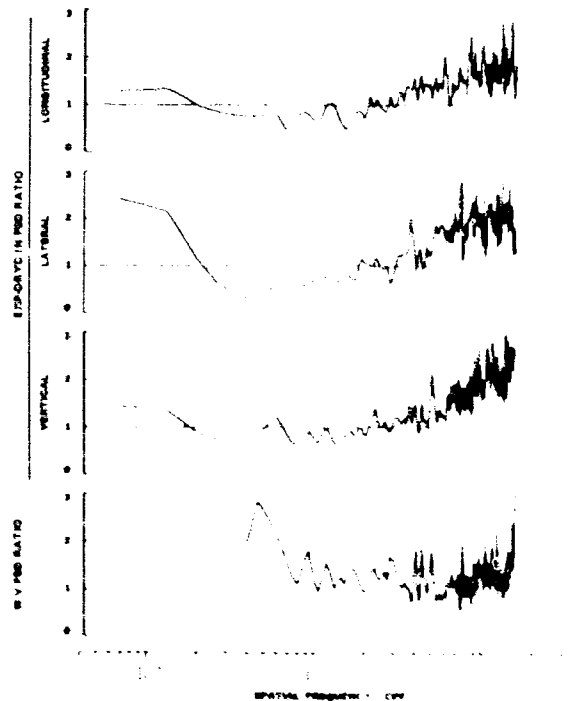
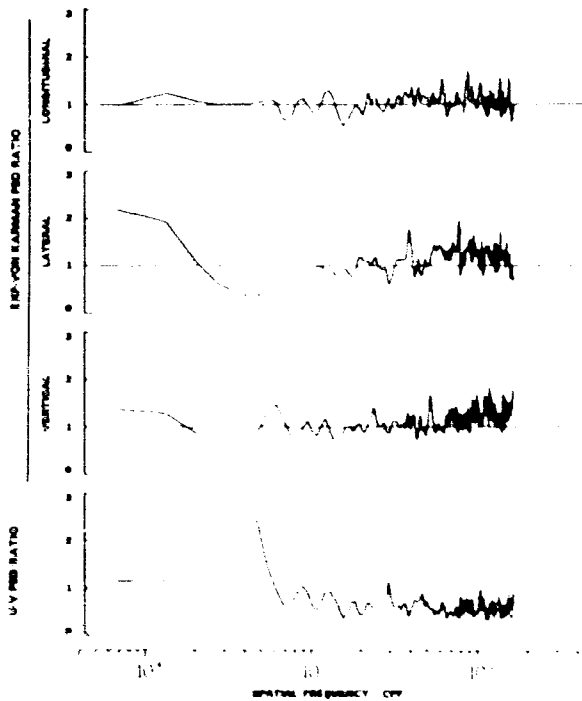
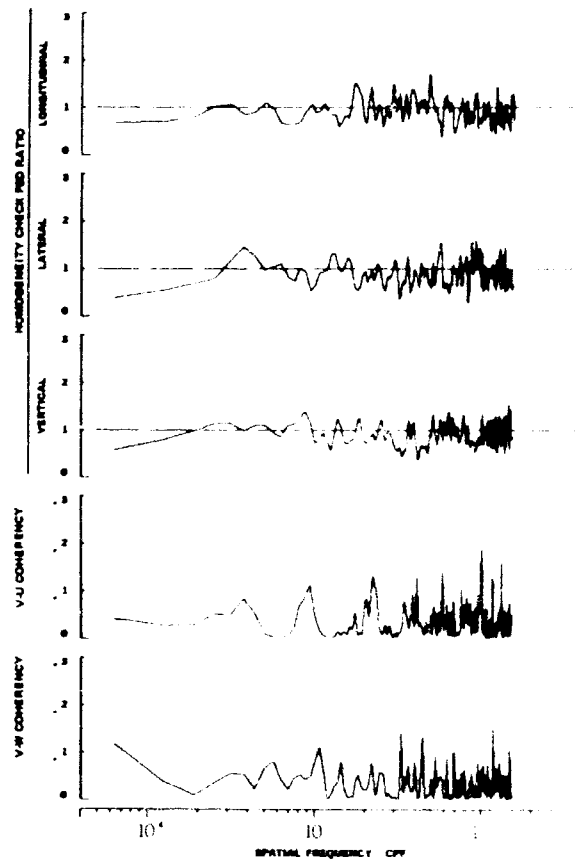
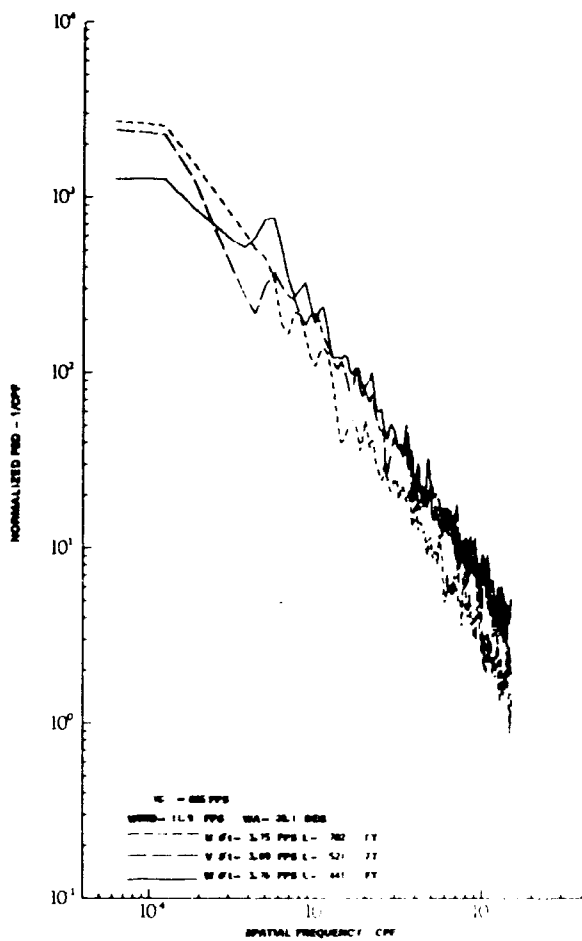
Turbulence Spectra Data For Test 239, Log 1, Category 122213



Turbulence Spectra Data For Test 239, Leg 3, Category 123213

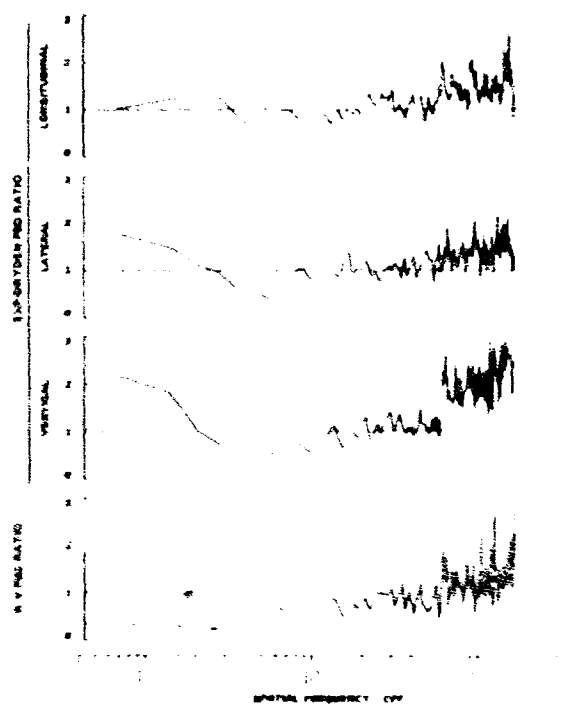
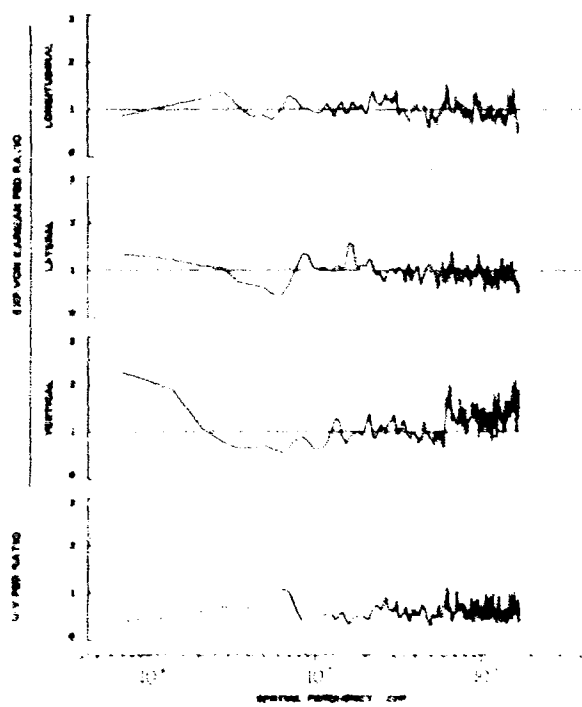
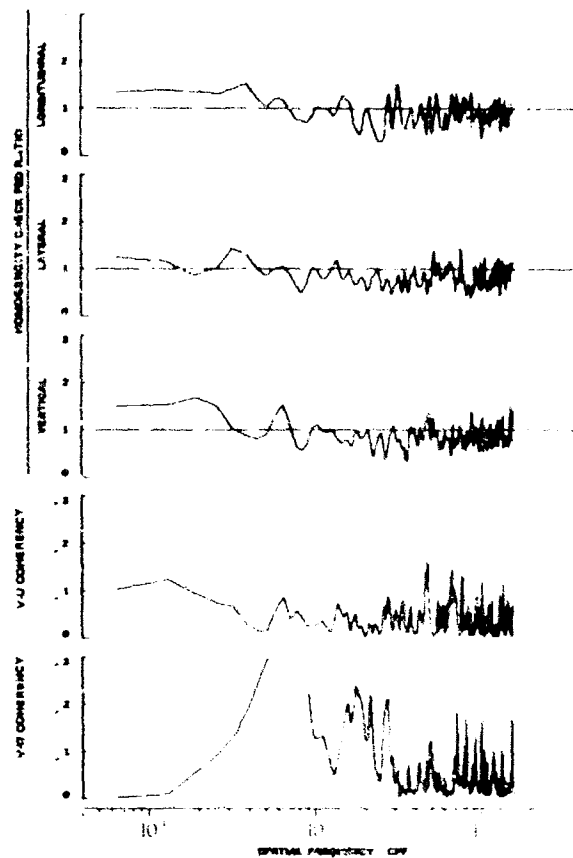
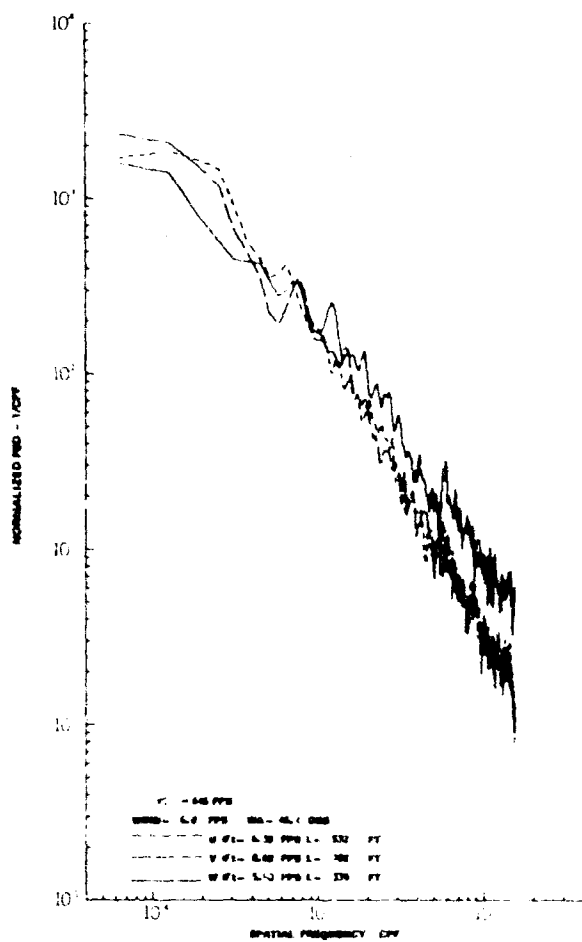


Turbulence Spectra Data For Test 239, Leg 5, Category 123213

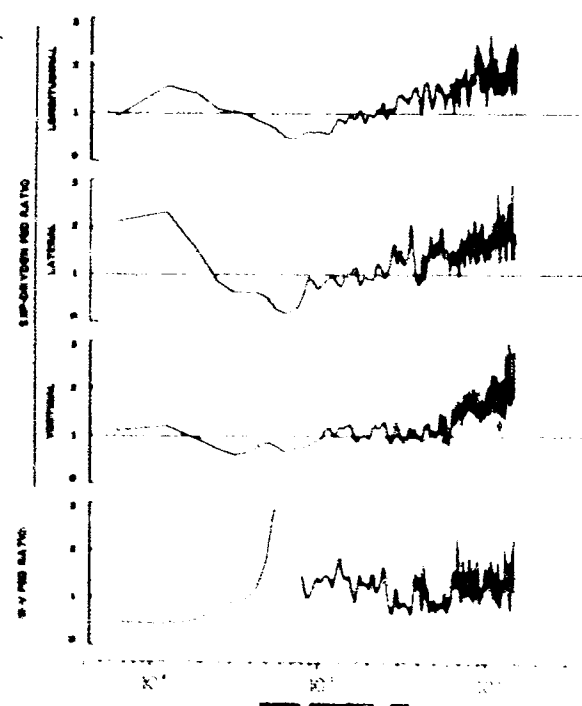
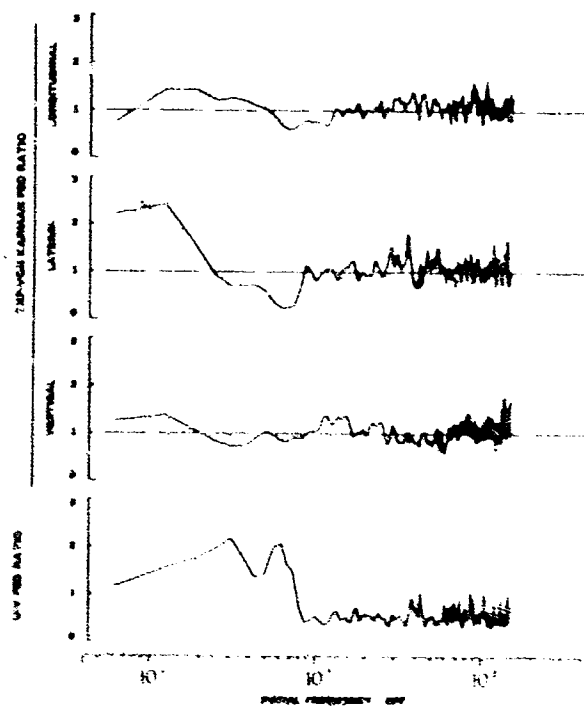
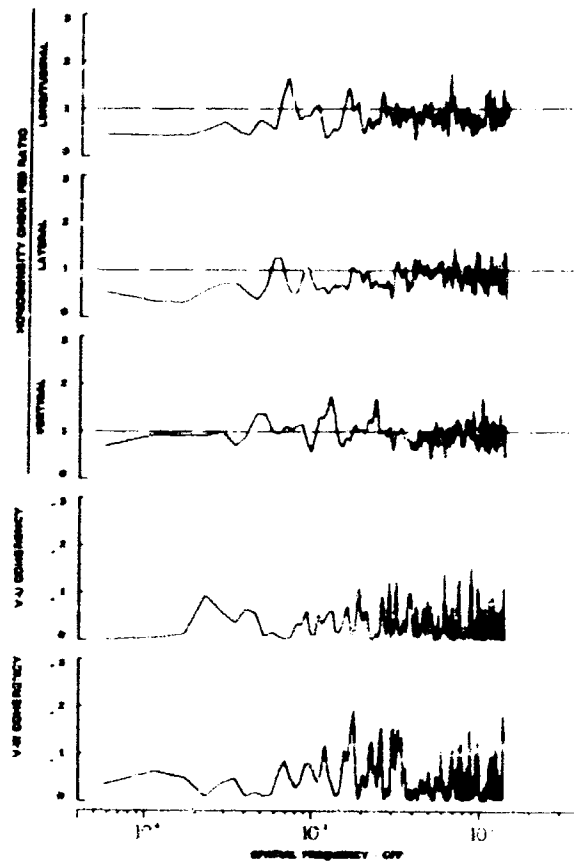
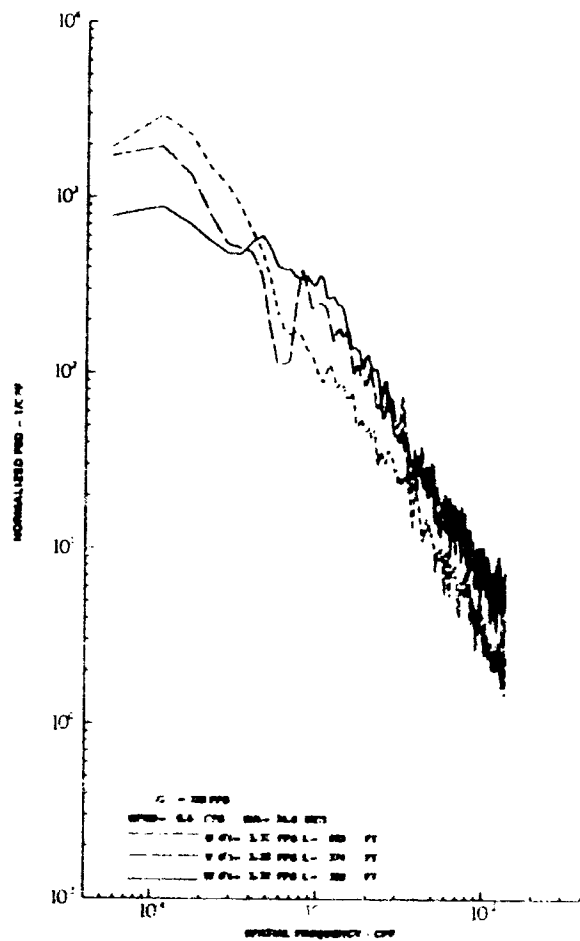


Turbulence Spectra Data for Test 241, Leg 3, Category 112213

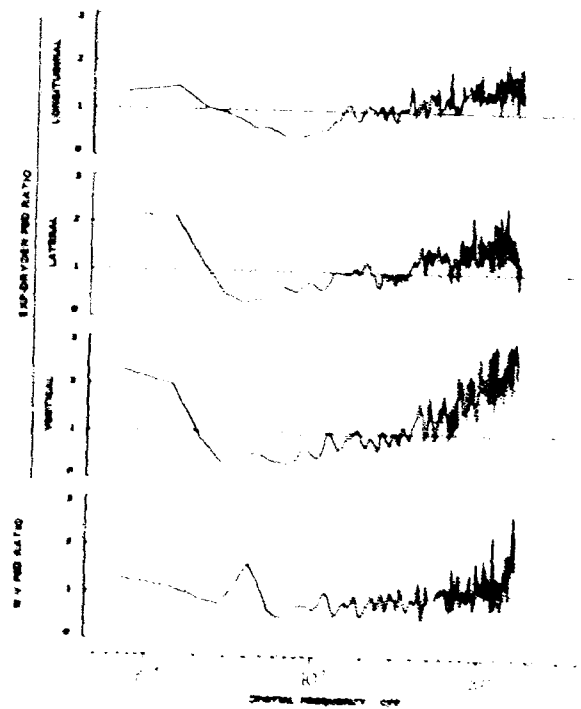
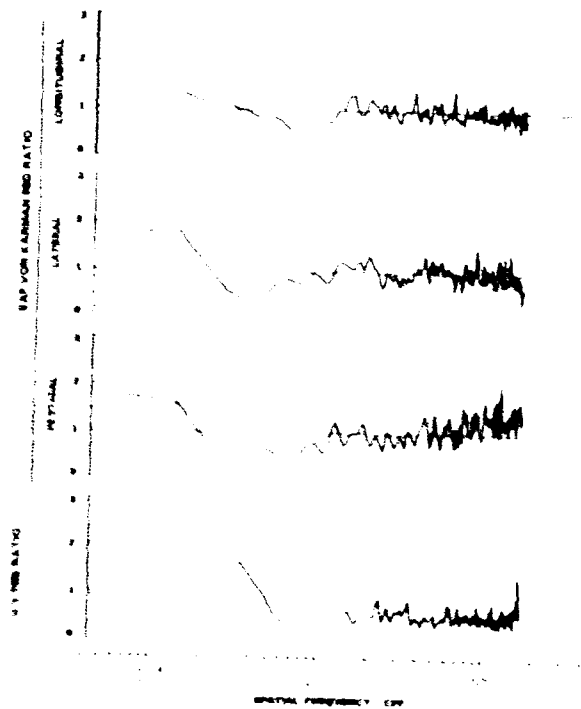
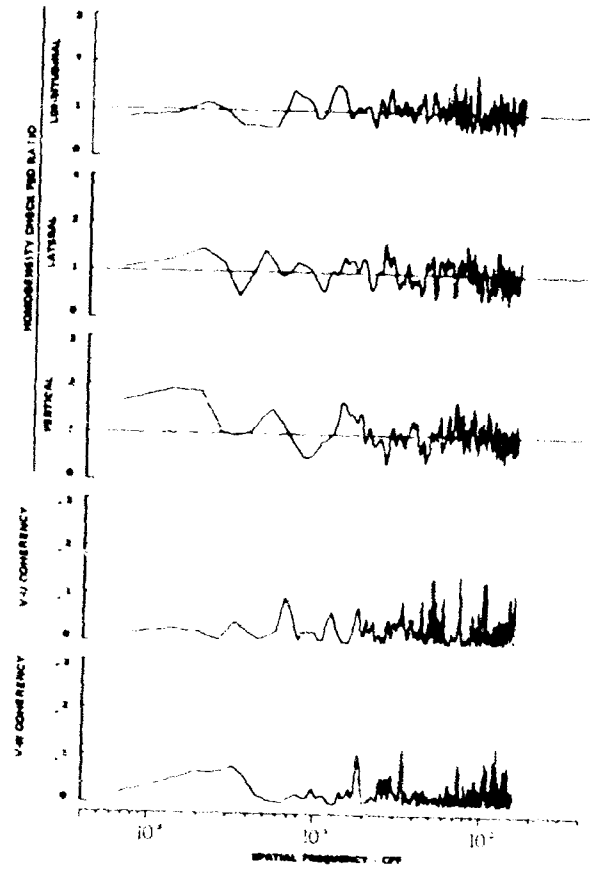
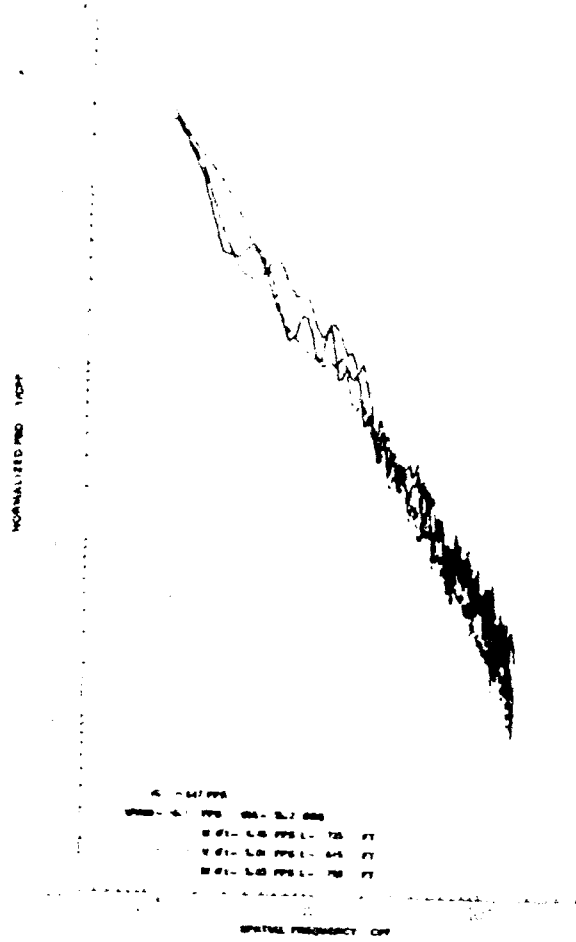




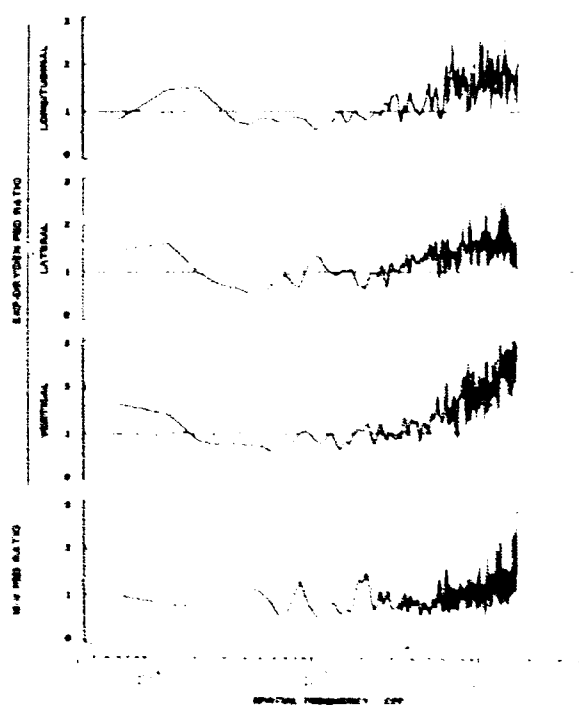
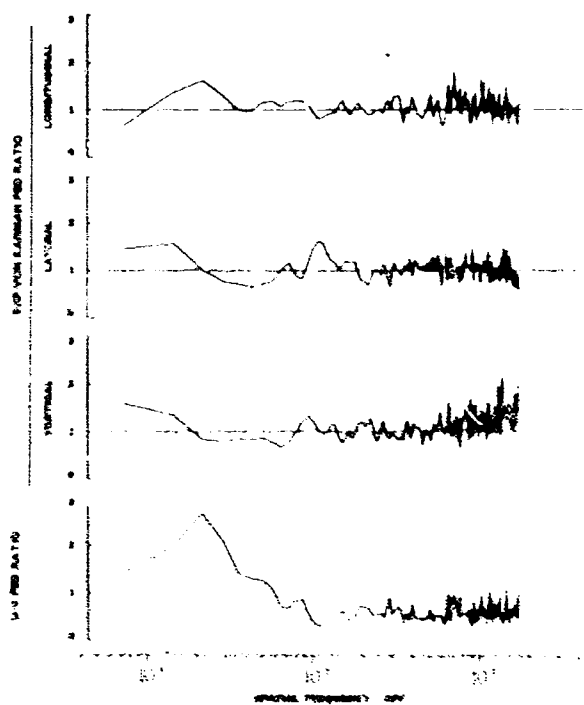
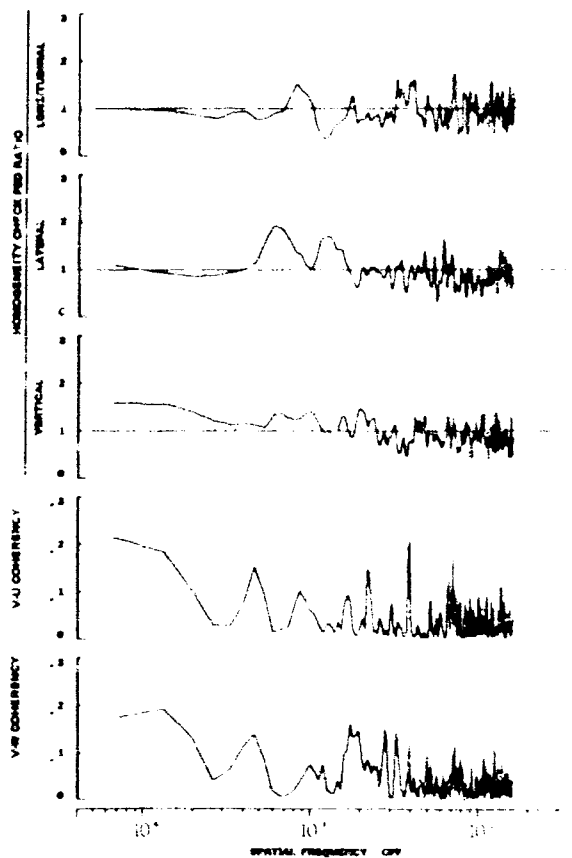
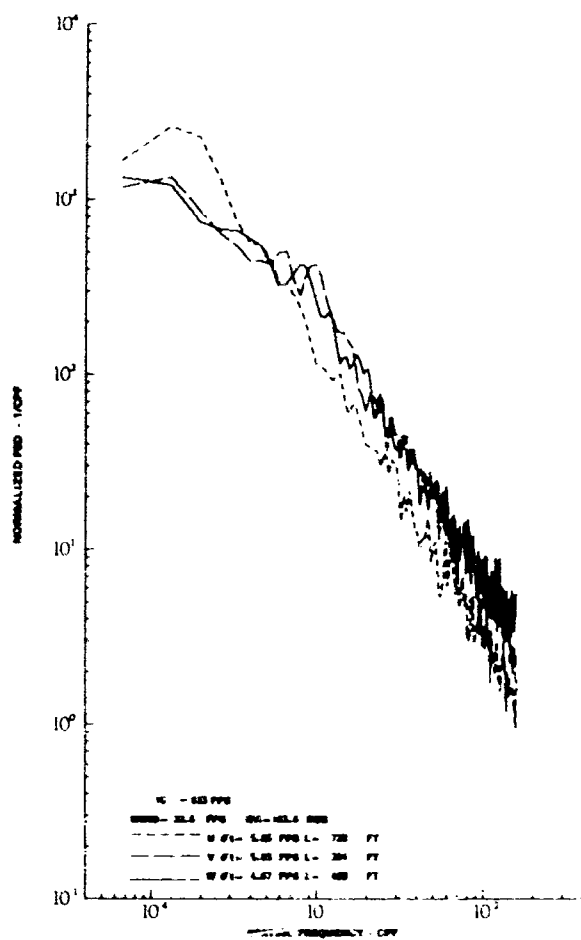
Turbulence Spectra Data for Test 241, Leg 5, Category 112213



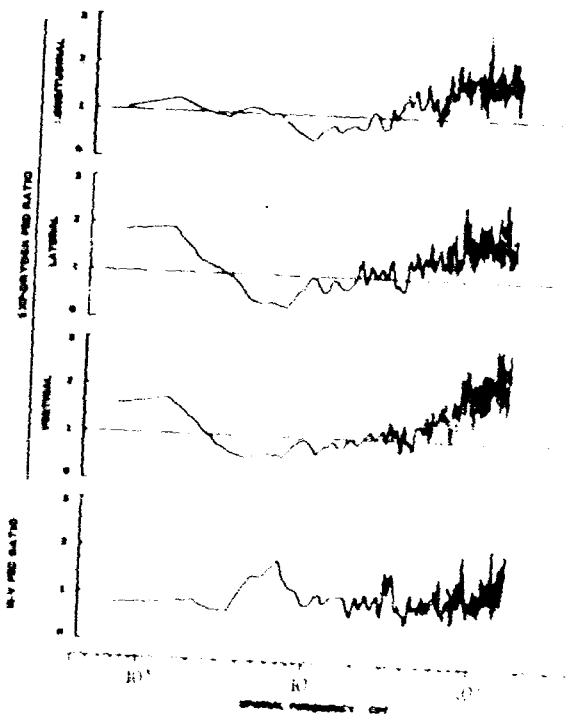
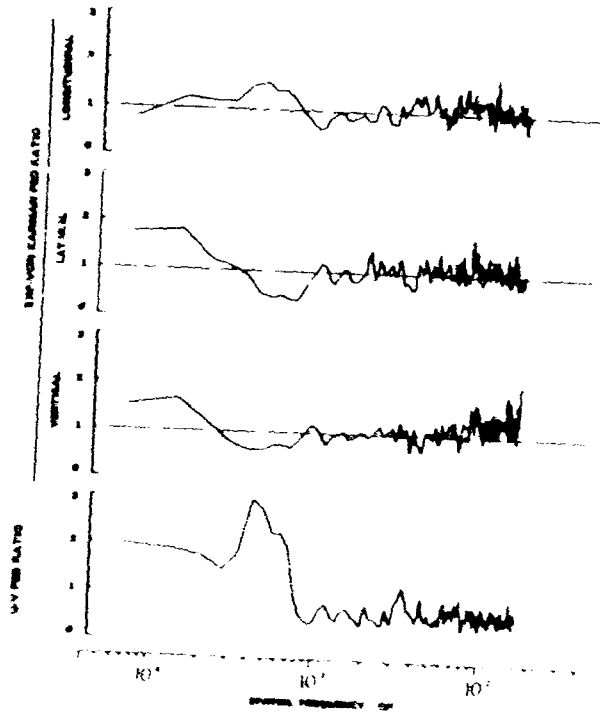
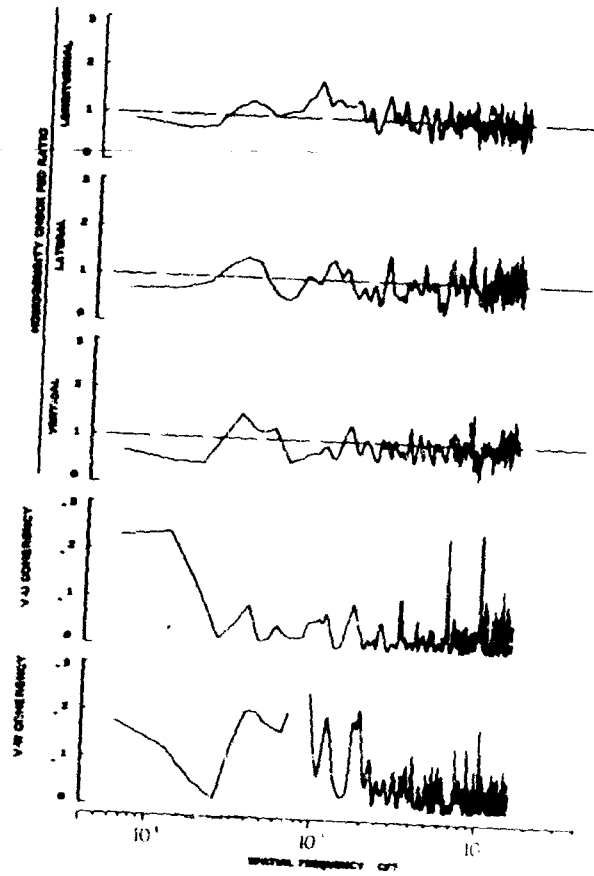
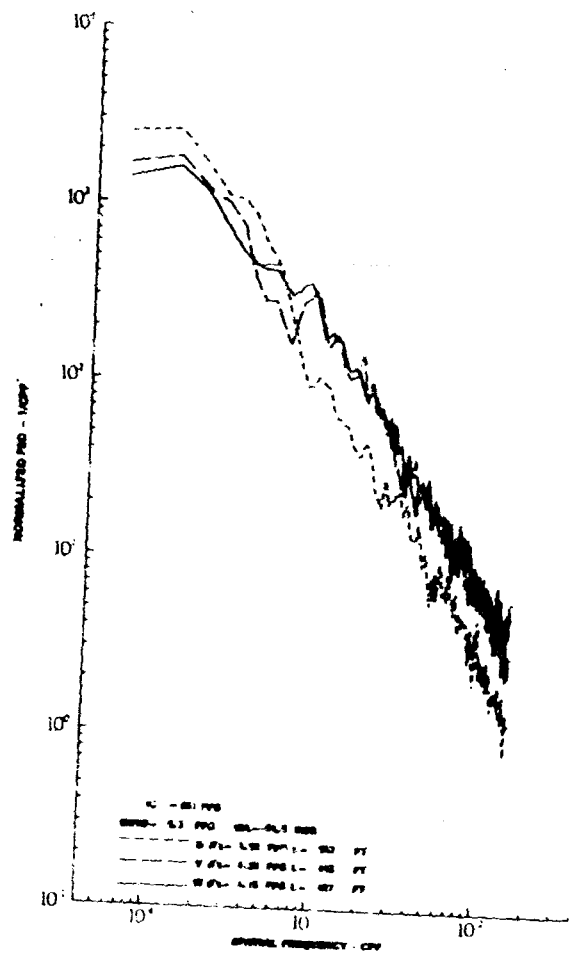
Turbulence Spectra Data for Test 241, Leg B, Category 413213



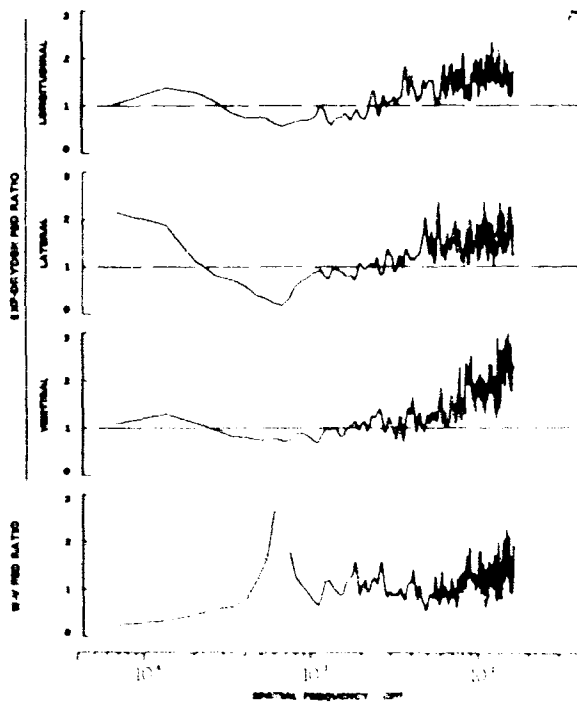
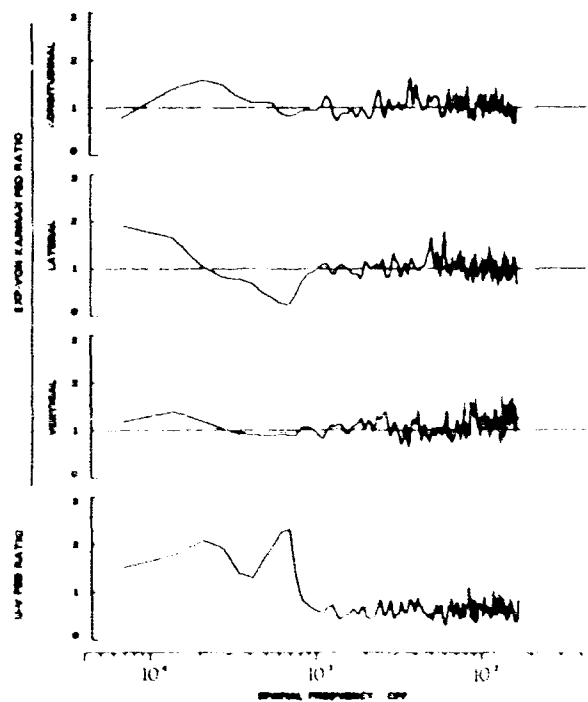
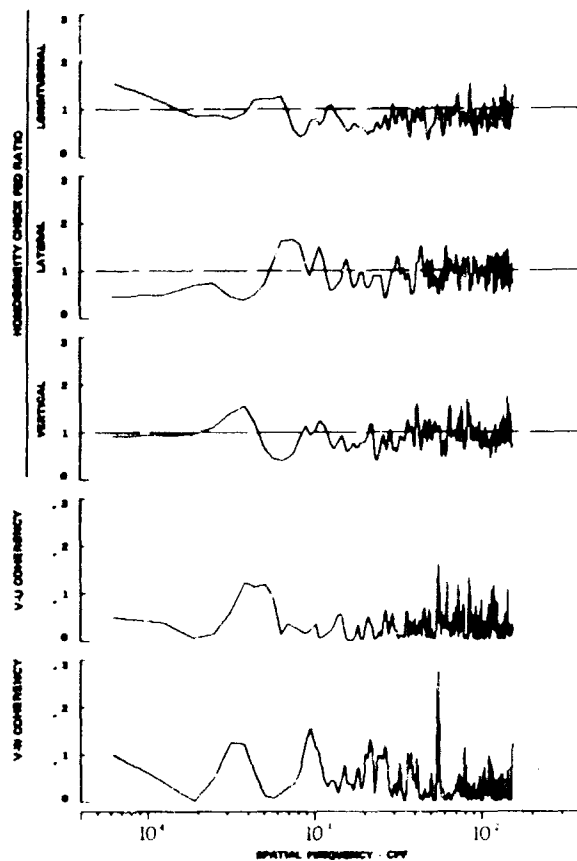
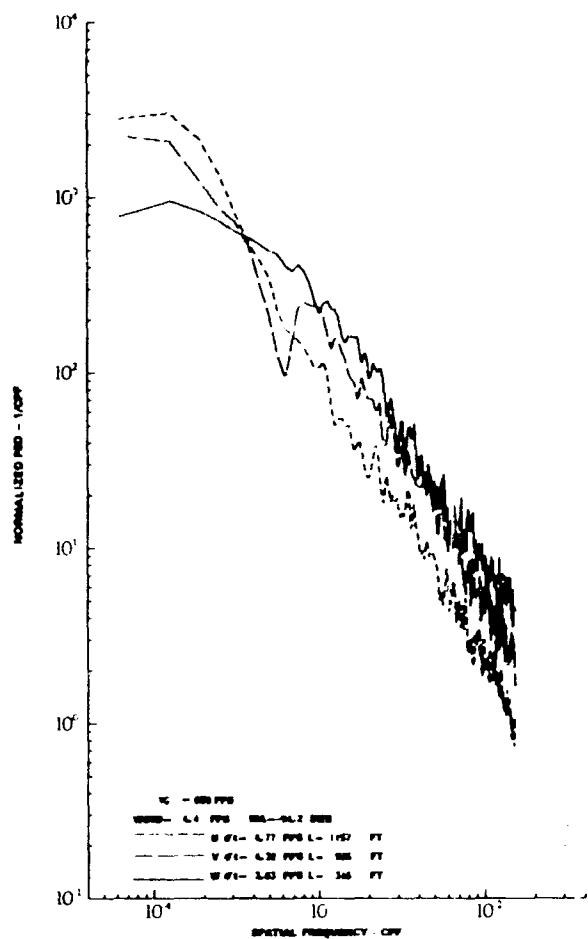
Turbulence Spectra Data For Test 242, Leg 2, Category 113313



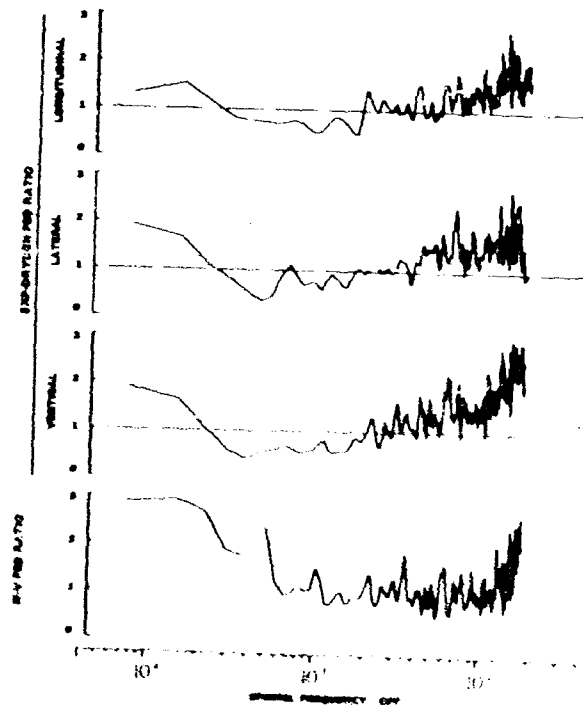
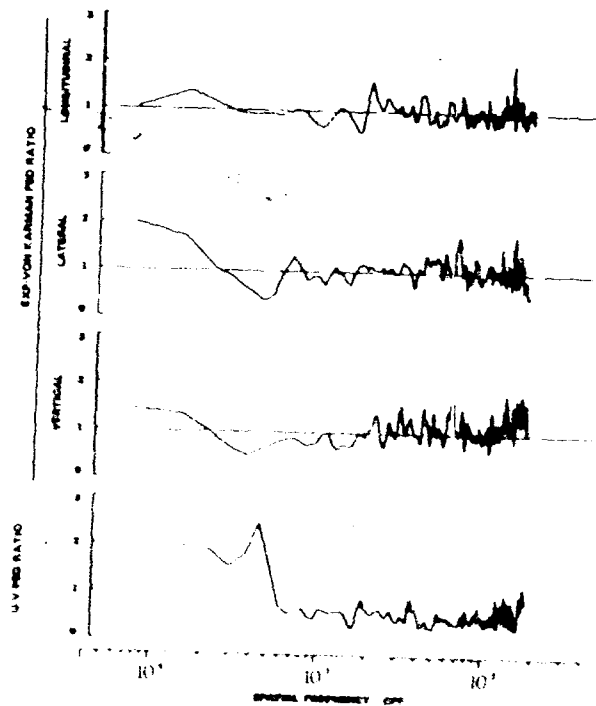
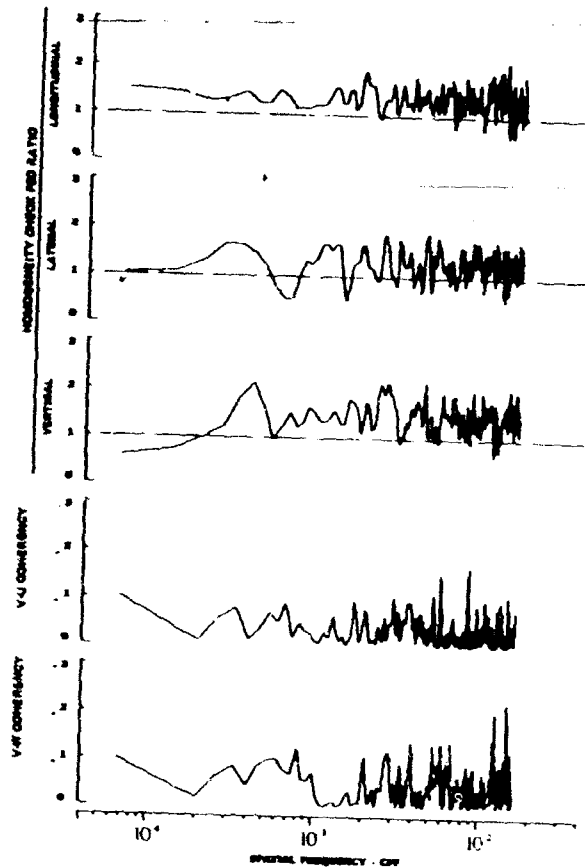
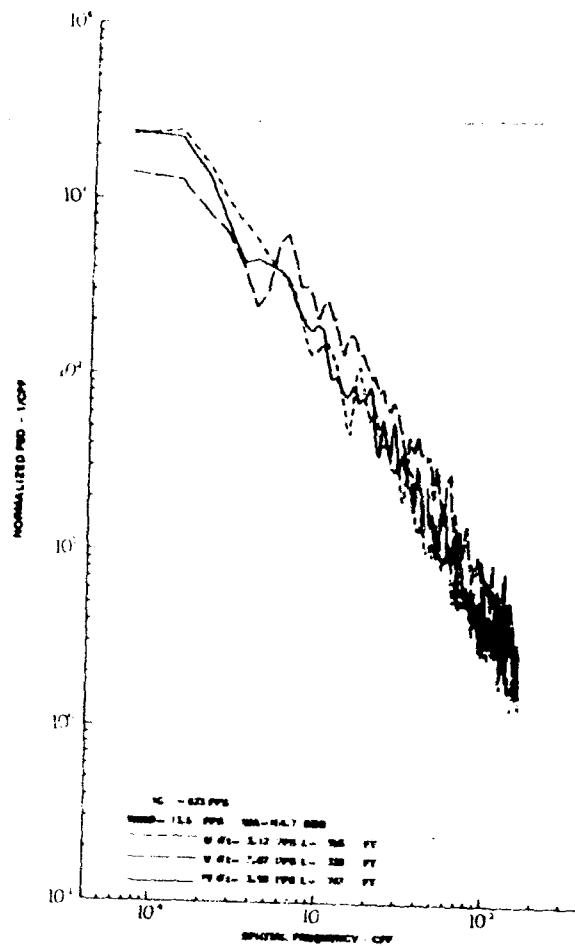
Turbulence Spectra Data for Test 242, Leg 4, Category 113313



Turbulence Spectra Data For Test 242, Log 6, Category 112313



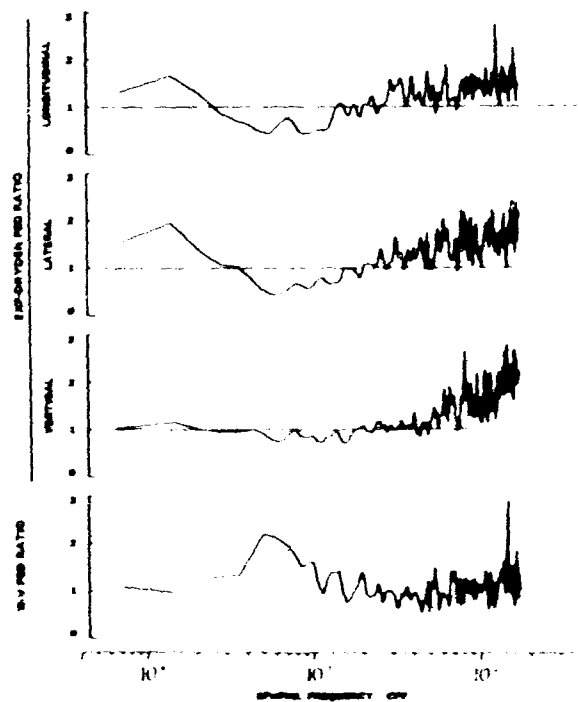
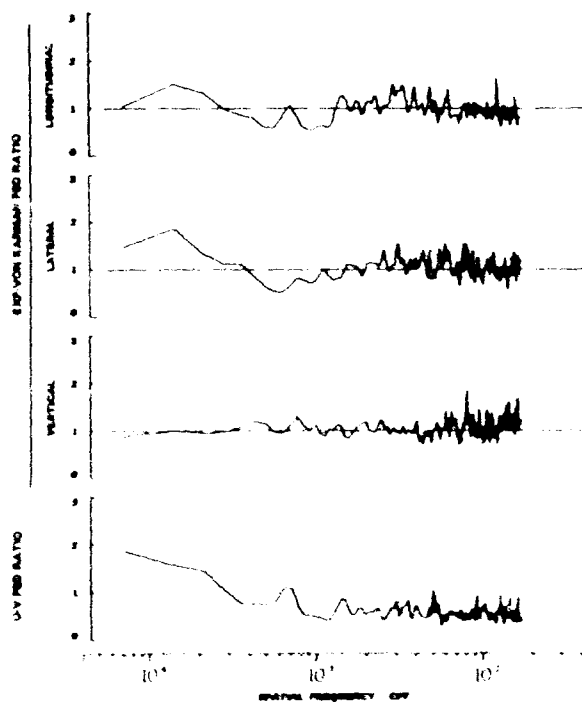
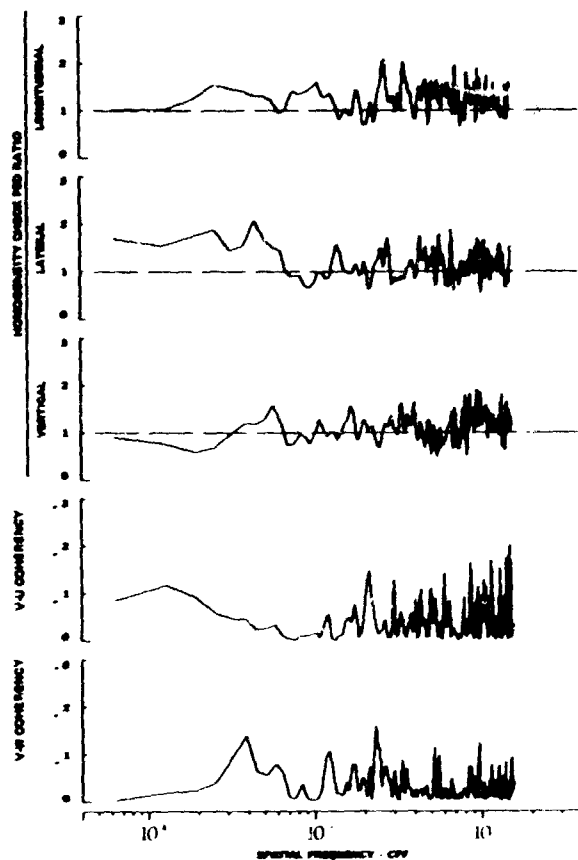
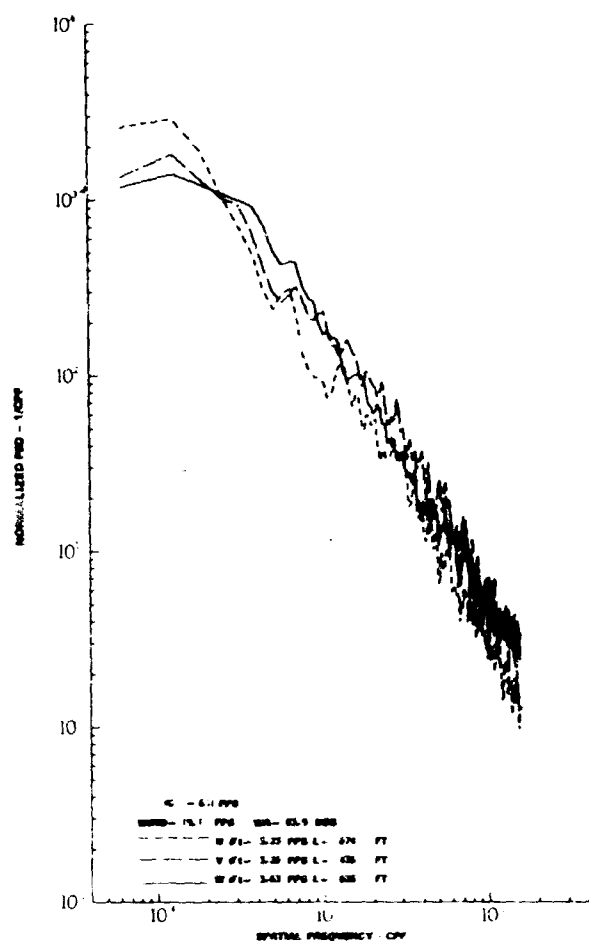
Turbulence Spectra Data For Test 242, Leg 8, Category 414313



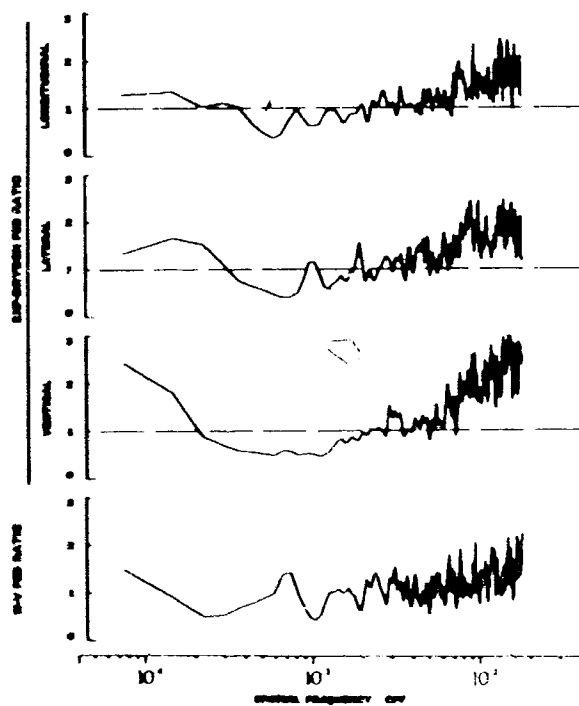
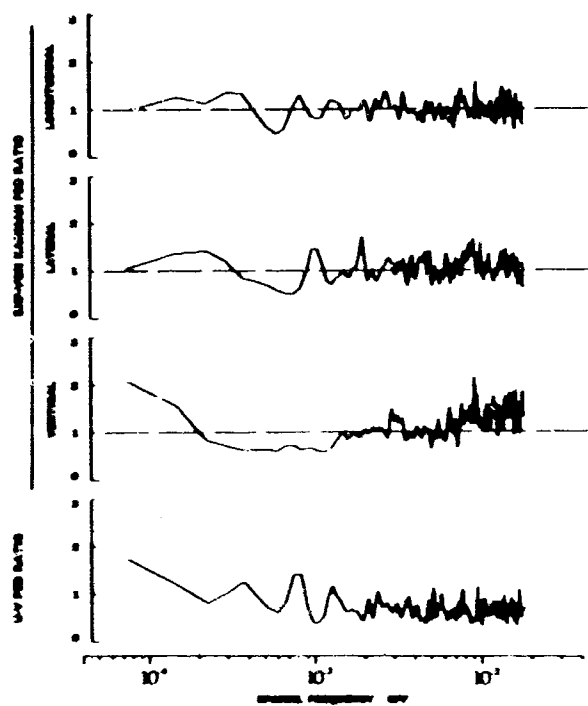
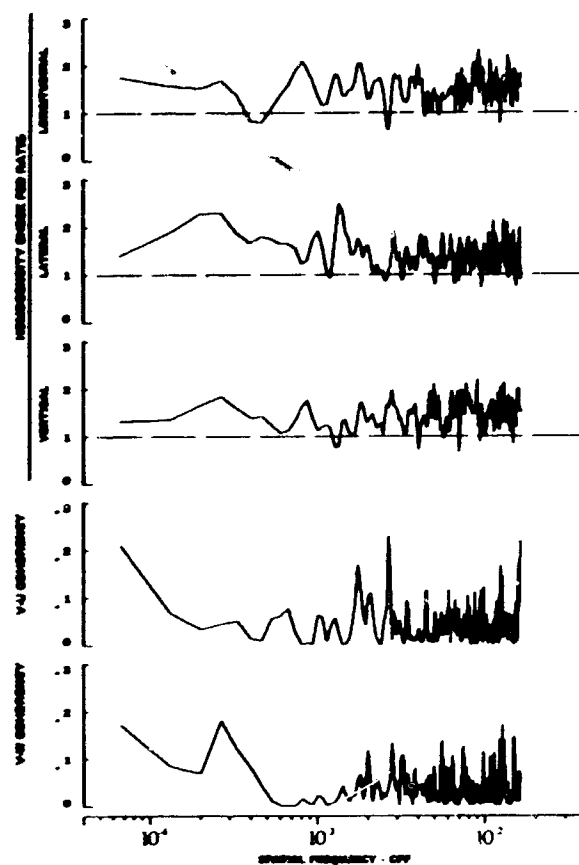
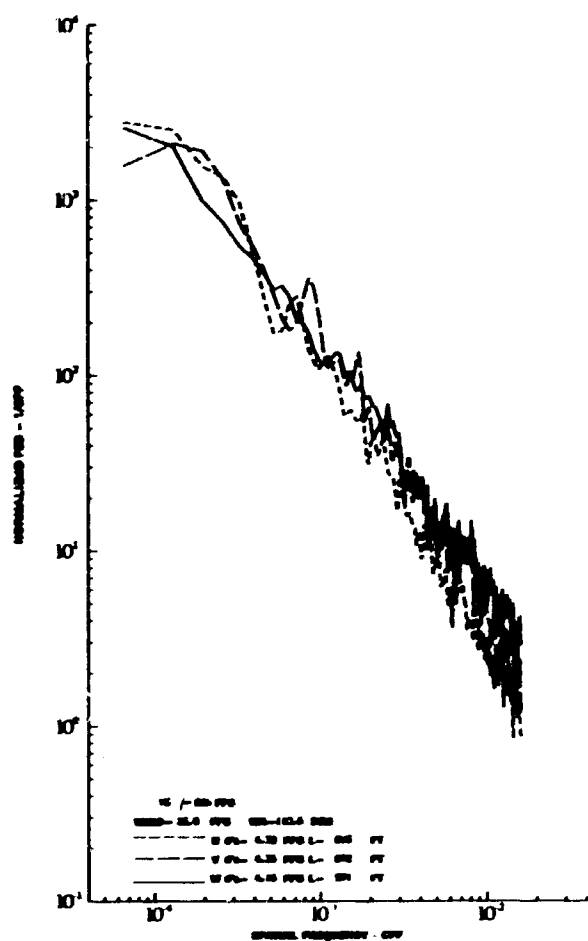
Turbulence Spectra Data For Test 243, Log 1, Category 123213

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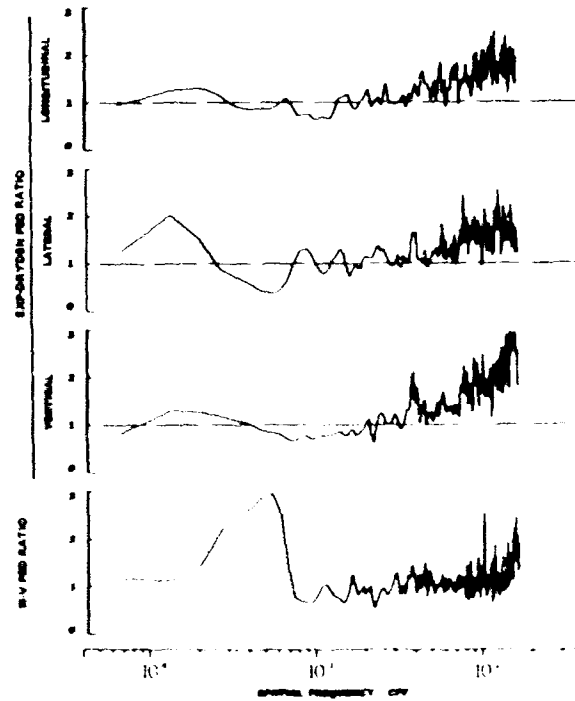
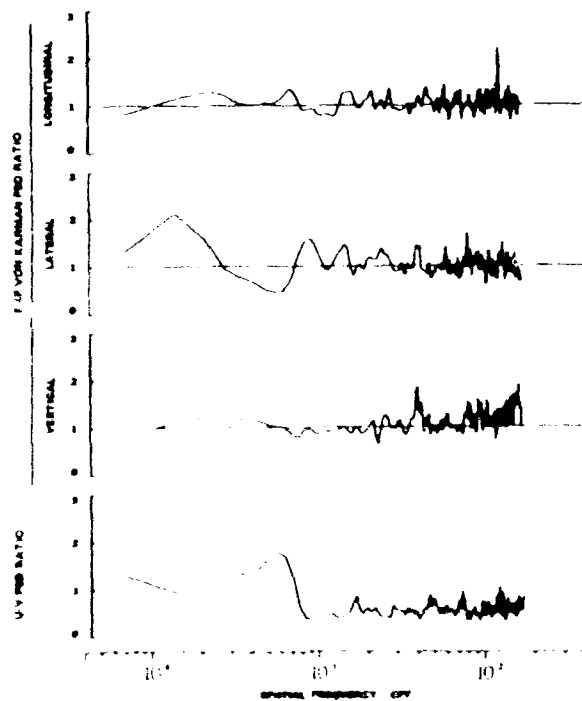
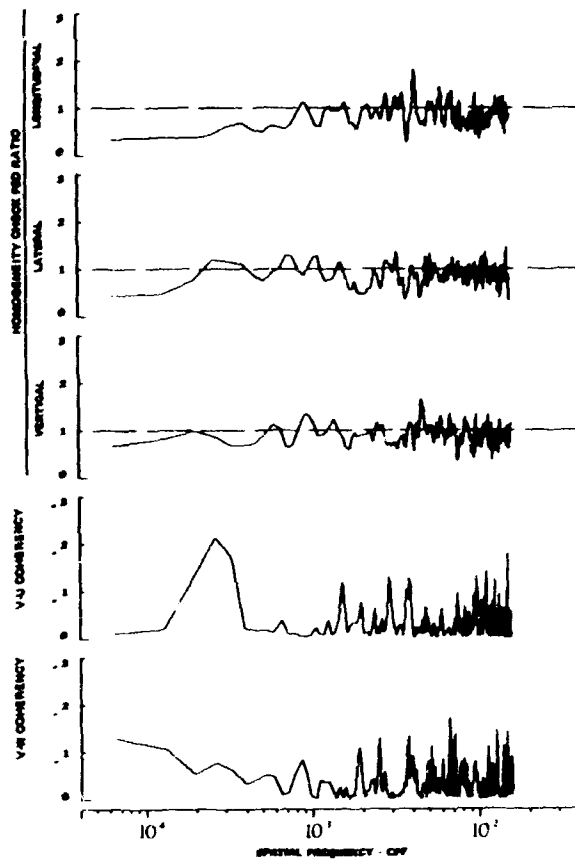
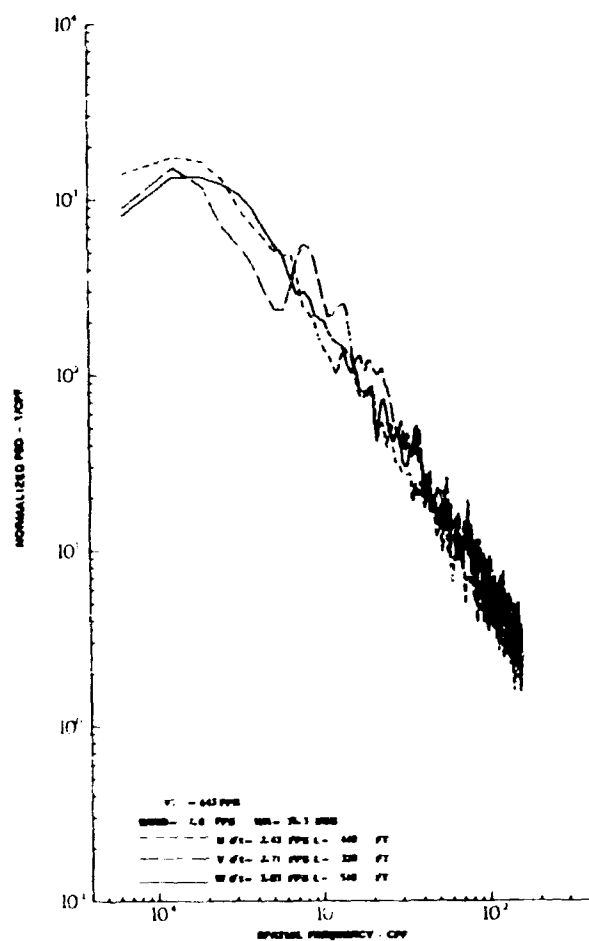




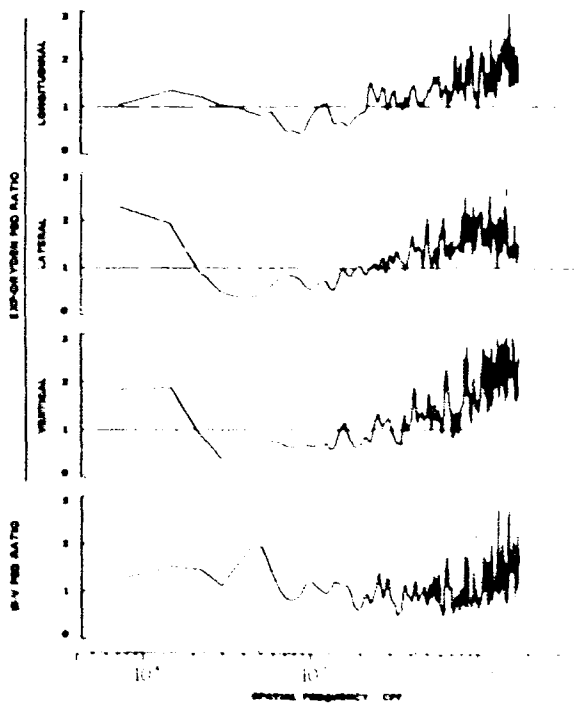
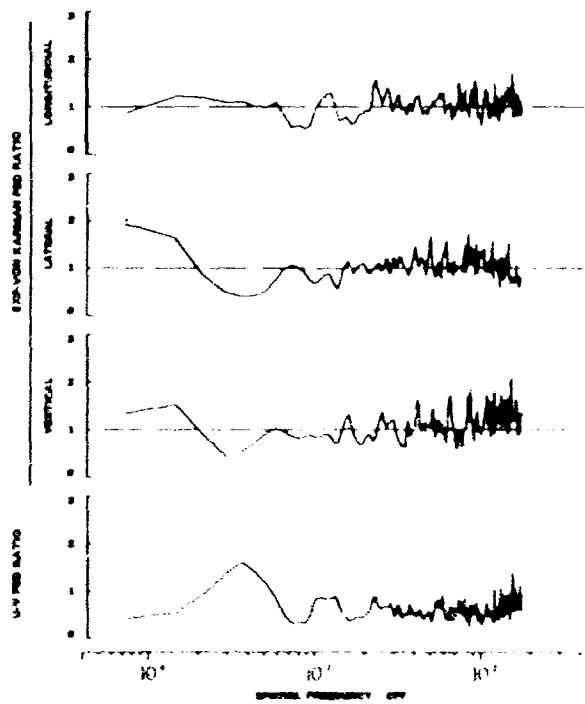
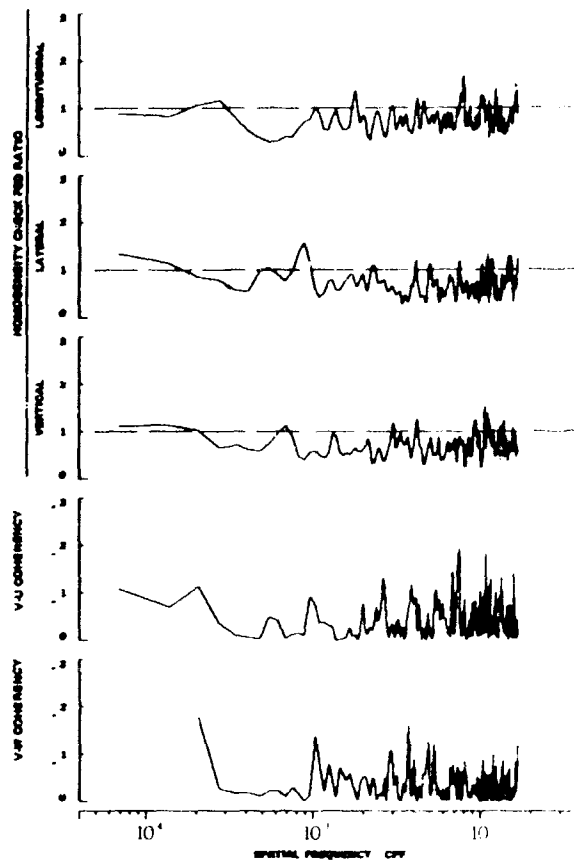
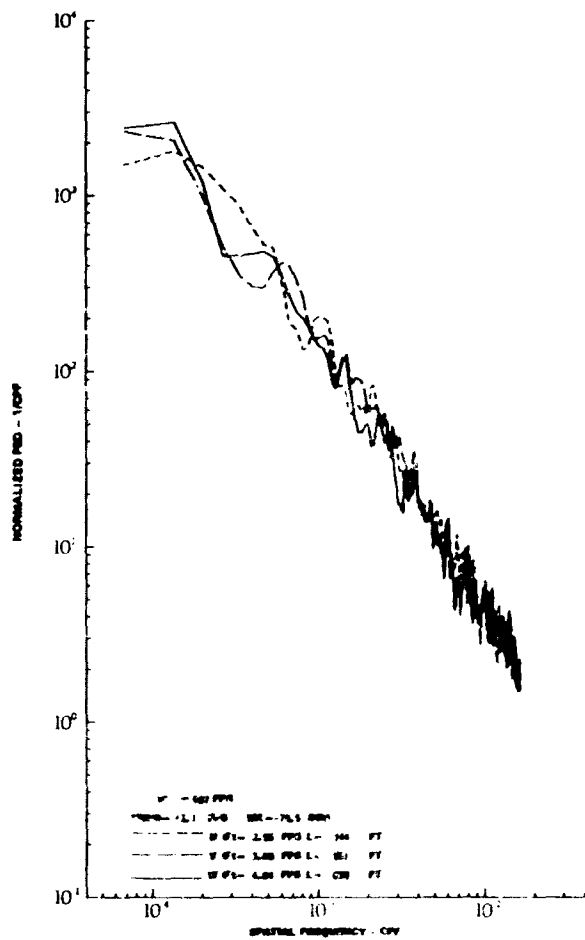
Turbulence Spectra Data For Test 243, Leg 3, Category 122213



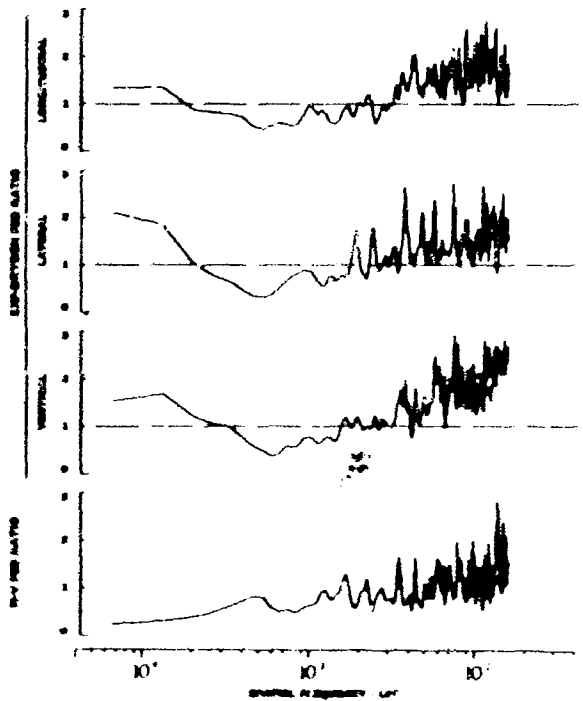
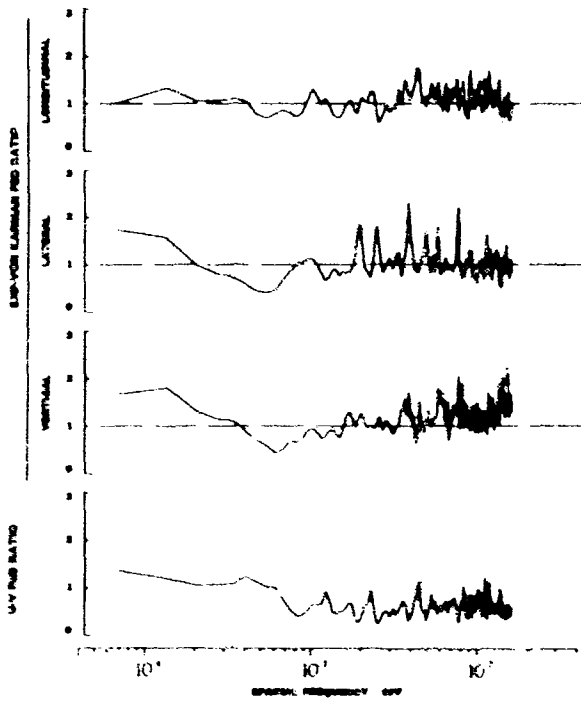
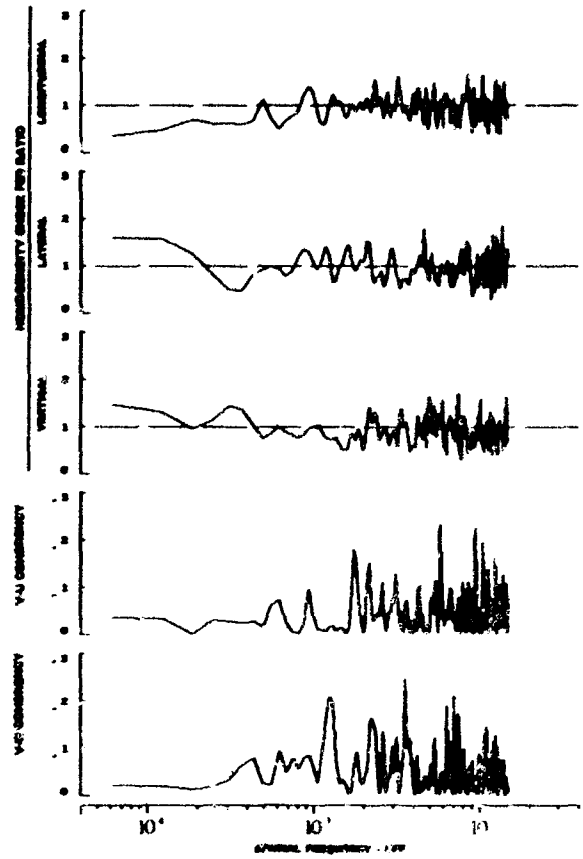
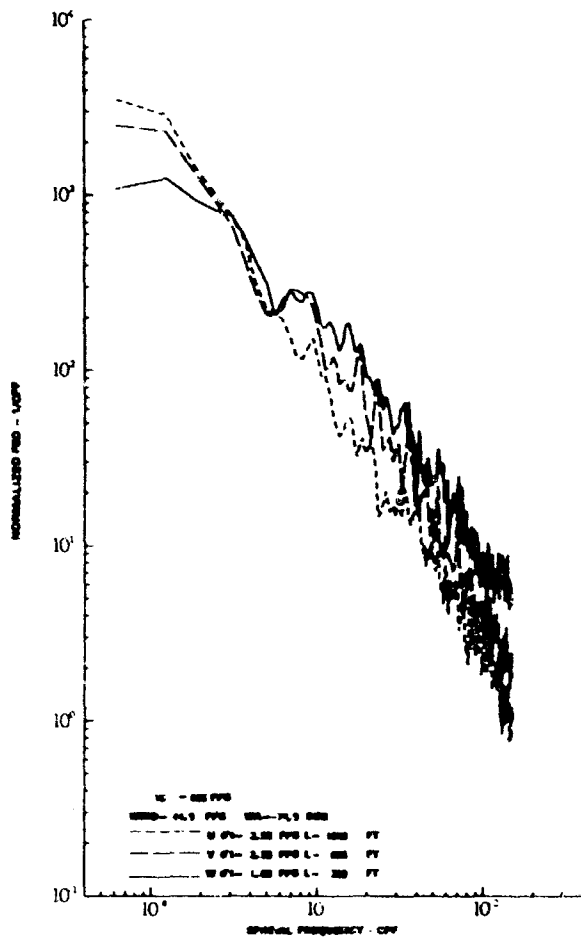
Turbulence Spectra Data For Test 243, Log 5, Category 123213



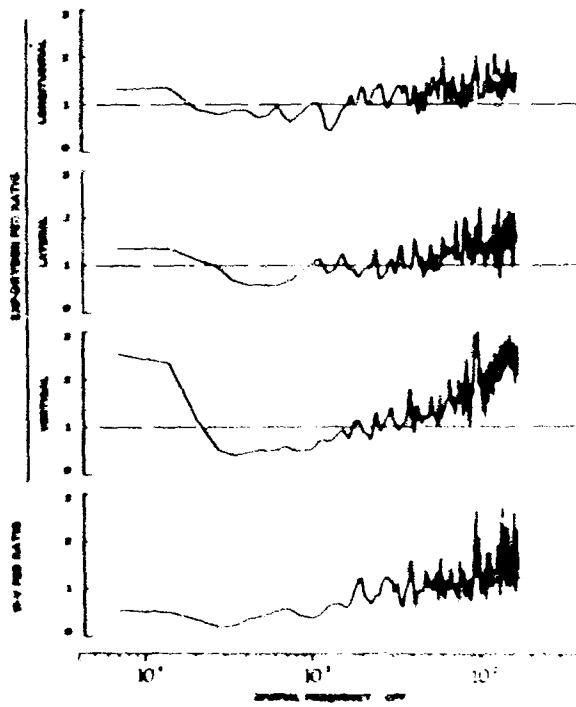
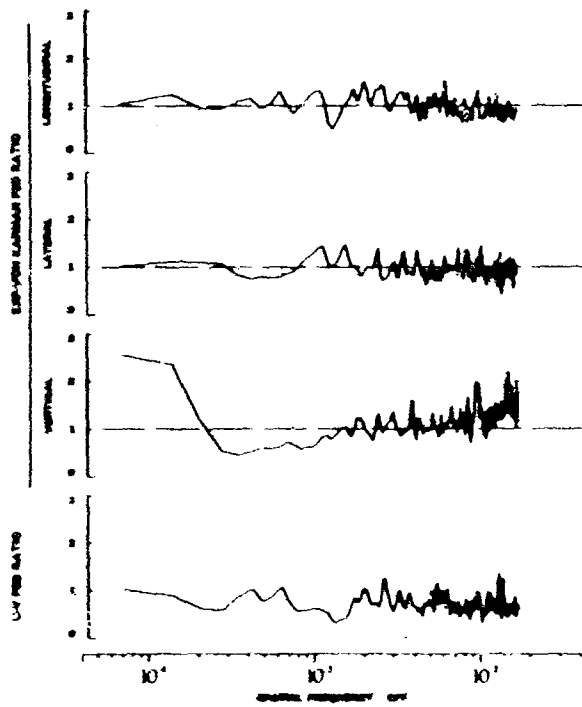
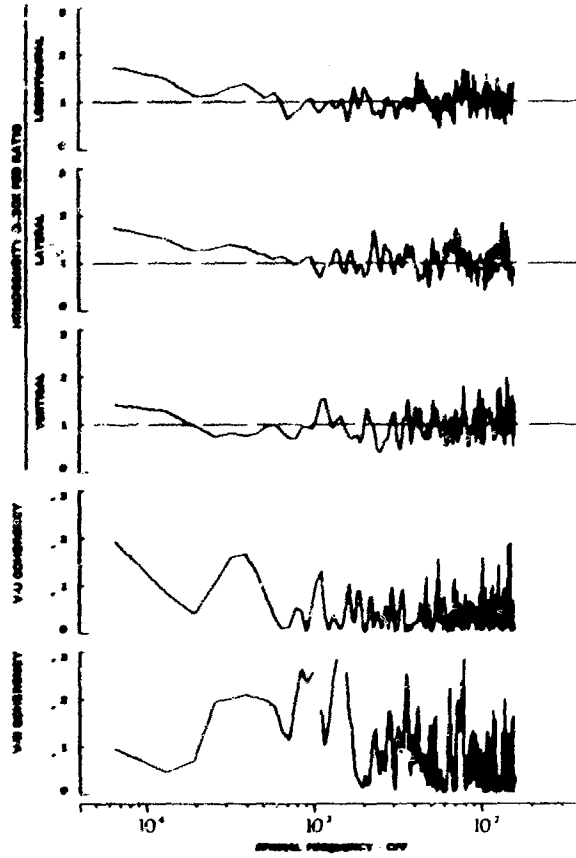
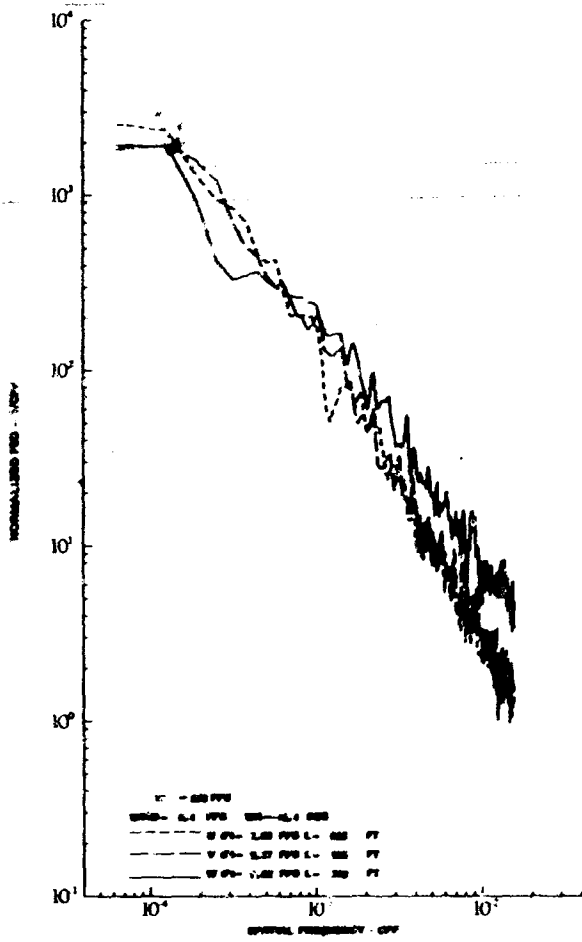
Turbulence Spectra Data For Test 243, Log 7, Category 123213



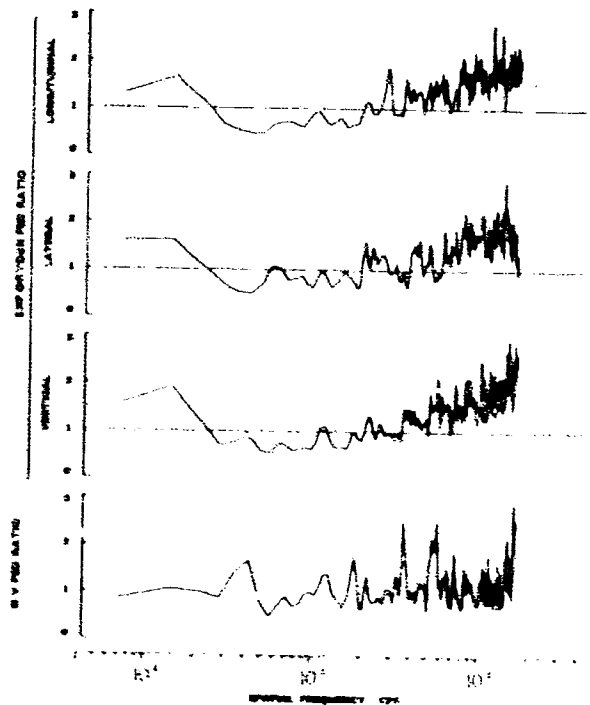
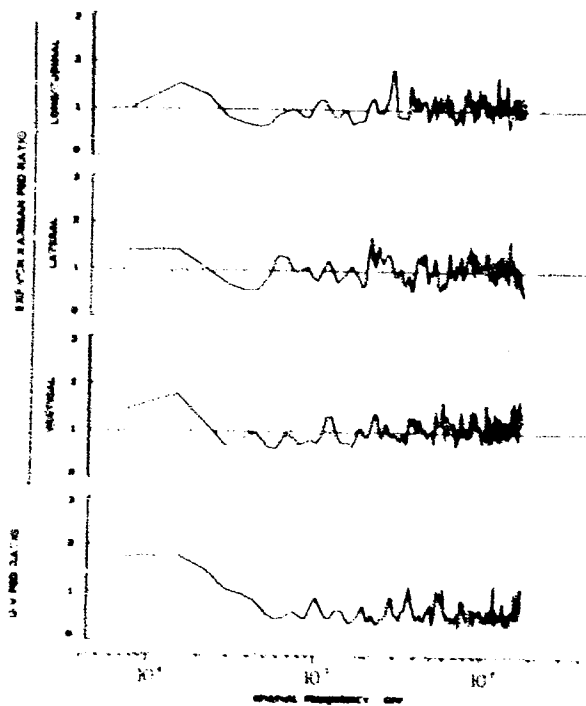
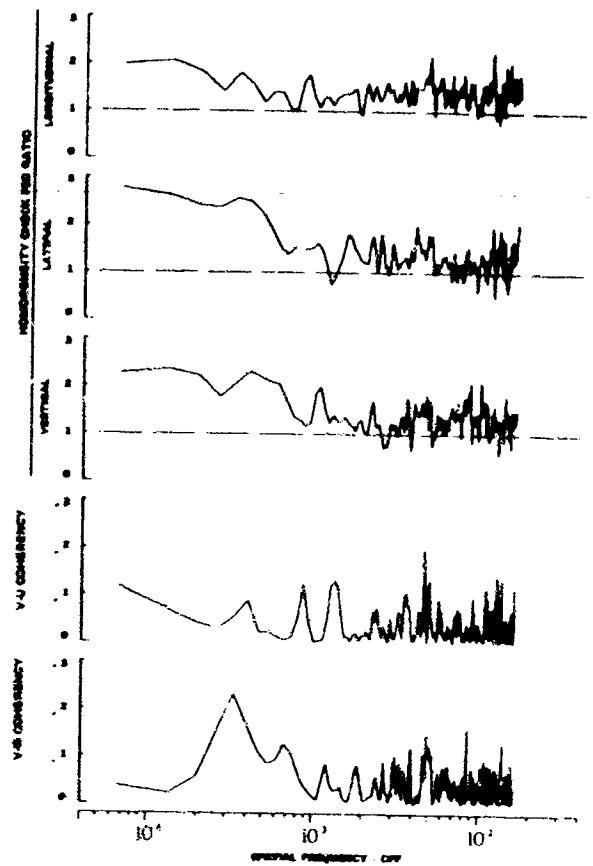
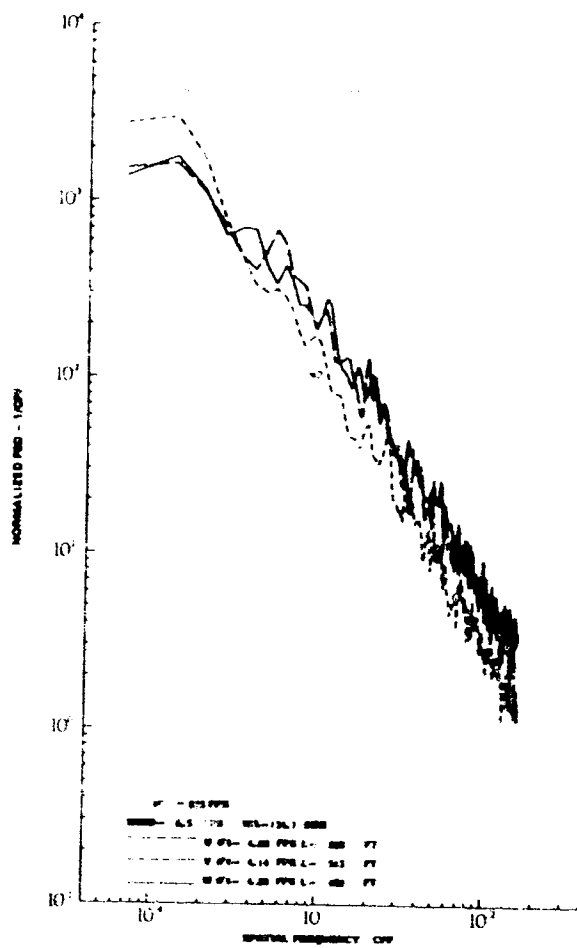
Turbulence Spectra Data For Test 244, Leg 2, Category 122313



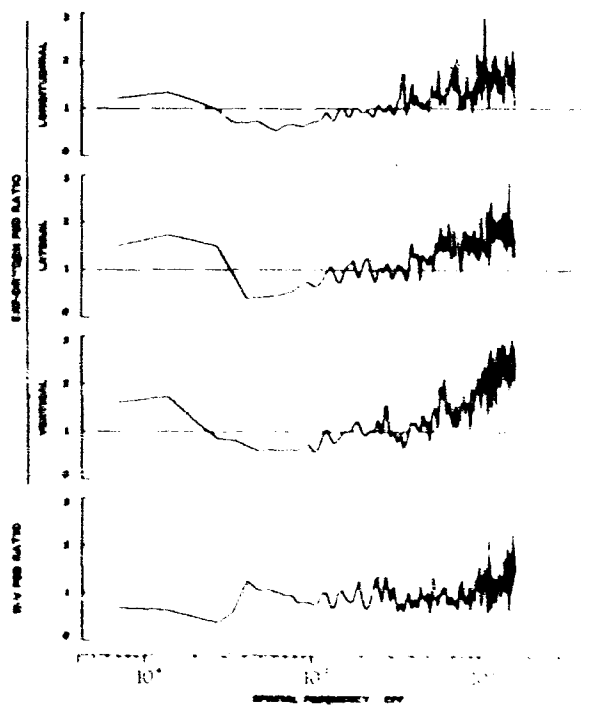
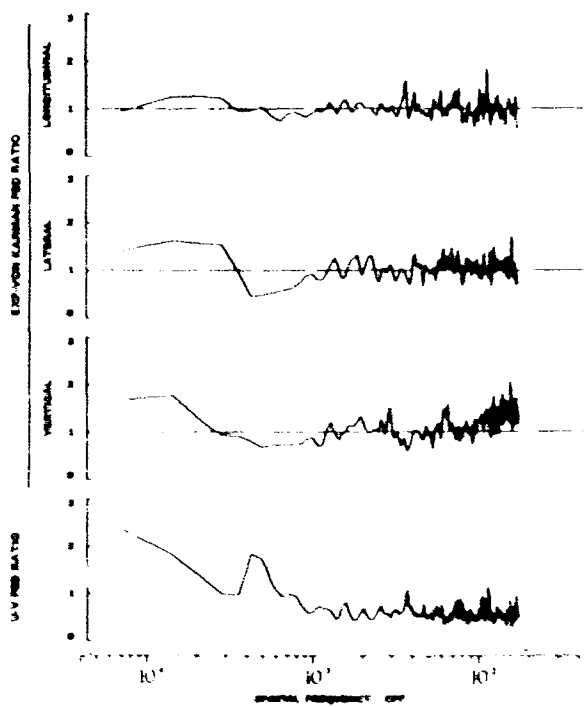
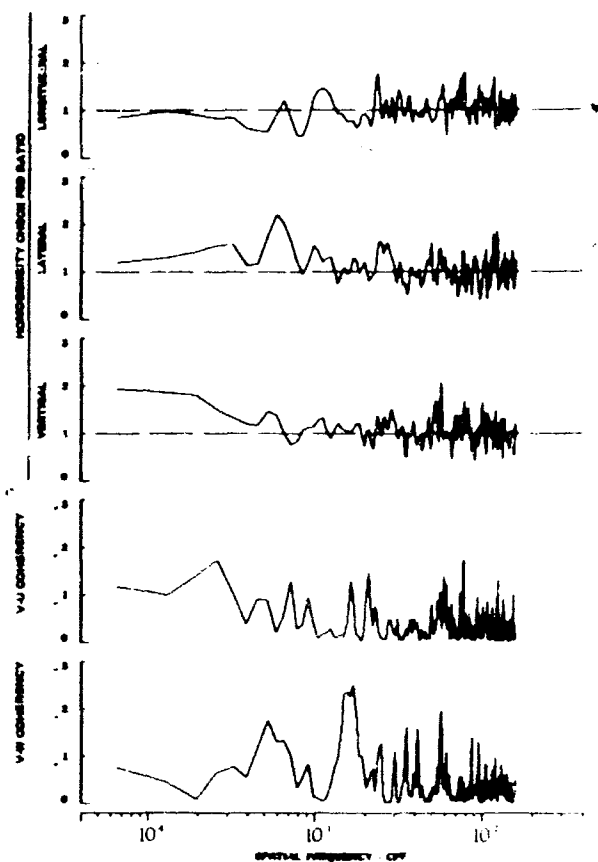
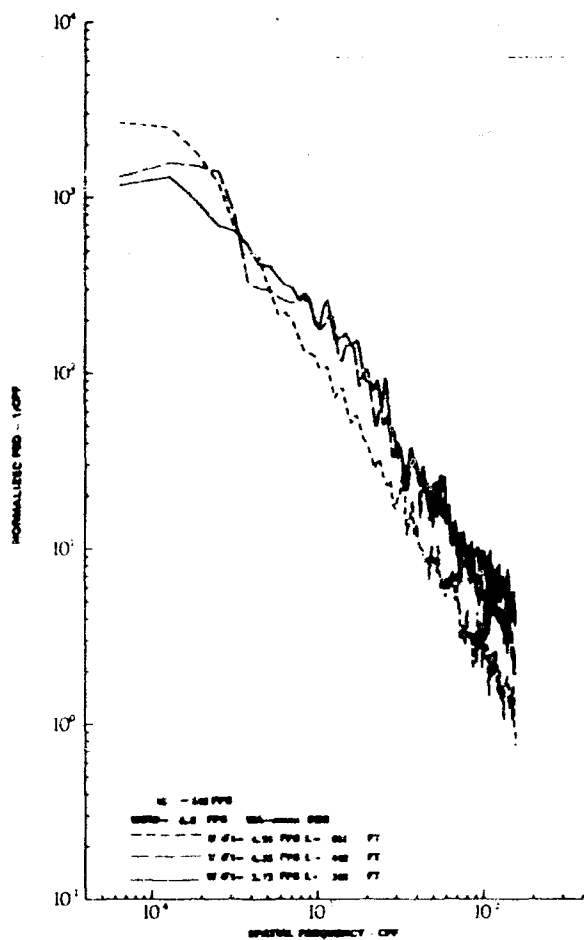
Turbulence Spectra Data For Test 244, Leg B, Category 422313



Turbulence Spectra Data For Test 245, Log 5, Category 112113

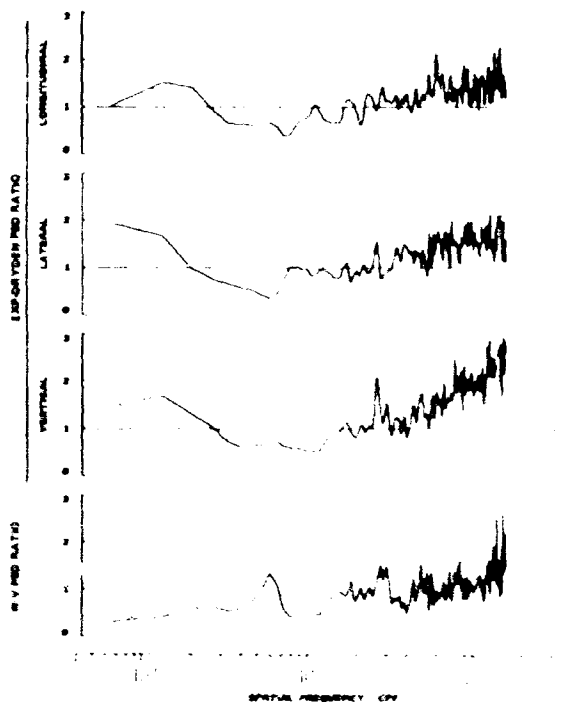
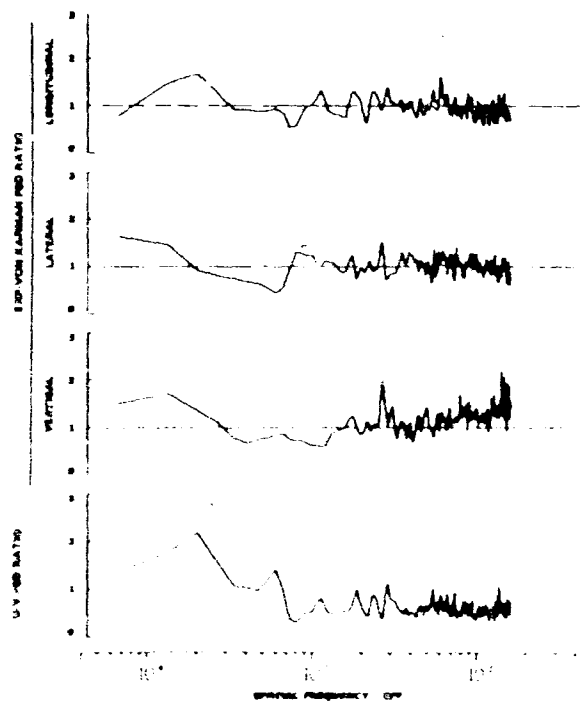
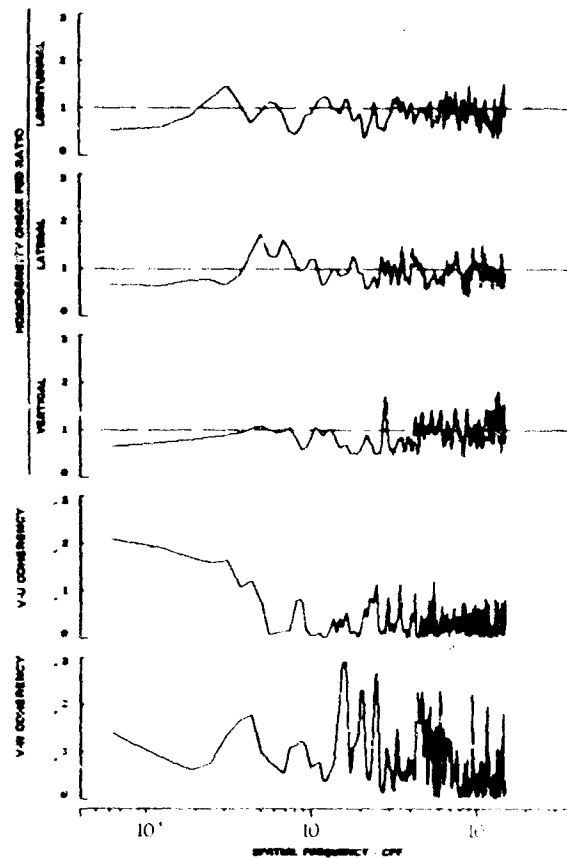
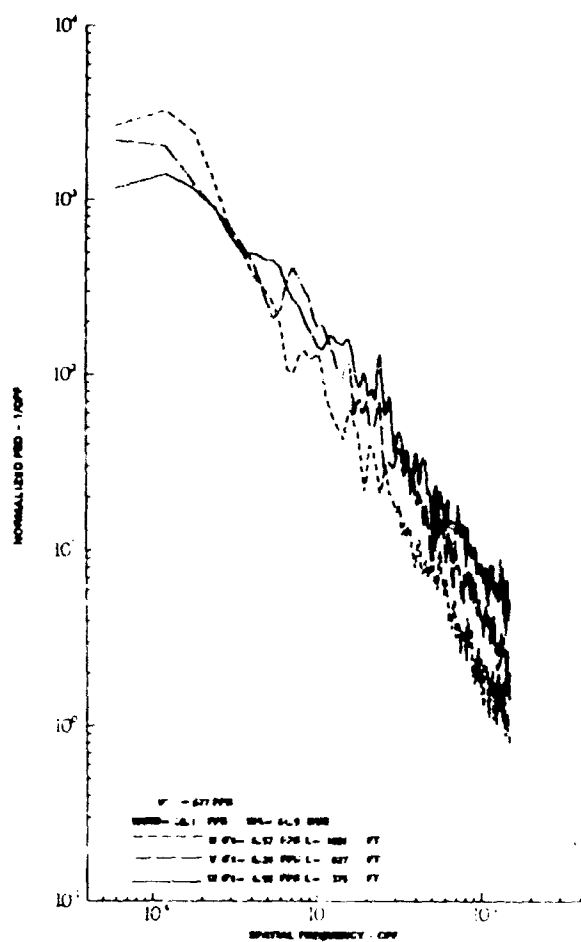


Turbulence Spectra Data For Test 246, Leg 2, Category 113213



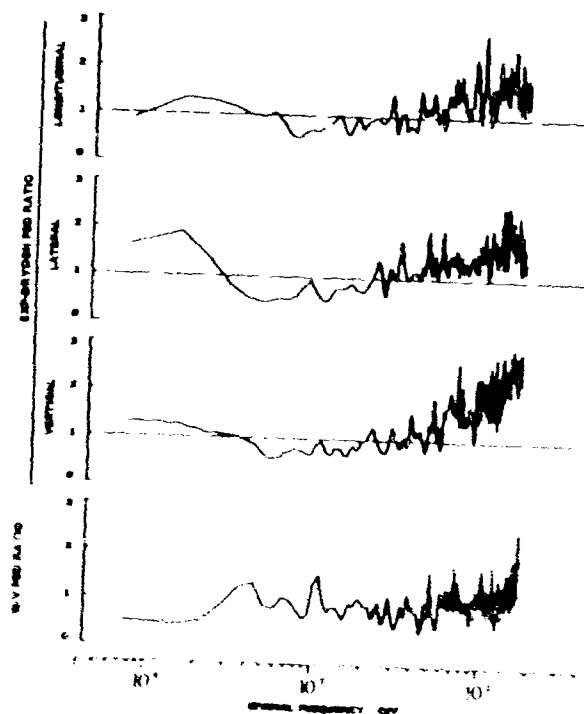
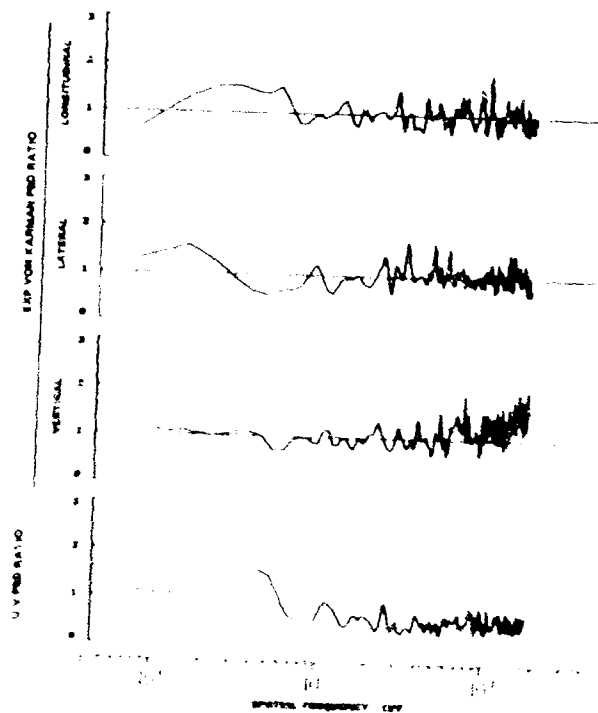
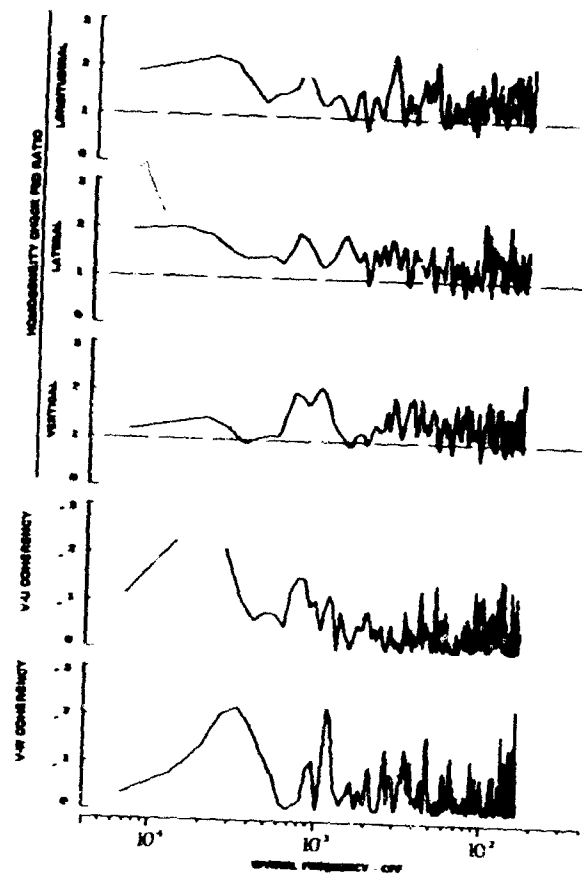
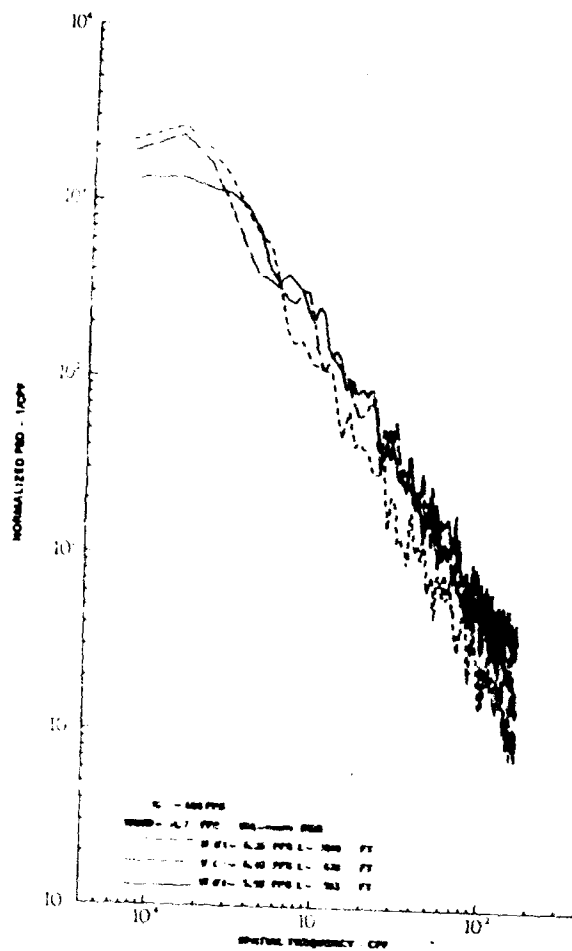
Turbulence Spectra Data For Test 246, Leg 4, Category 112213



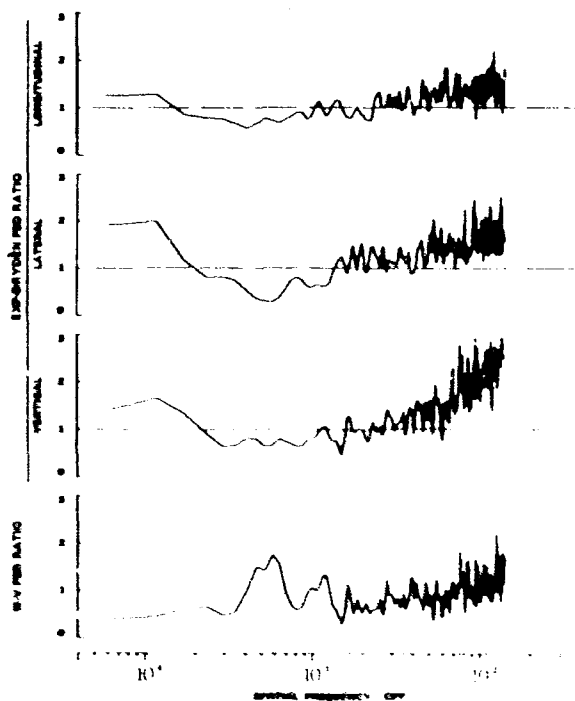
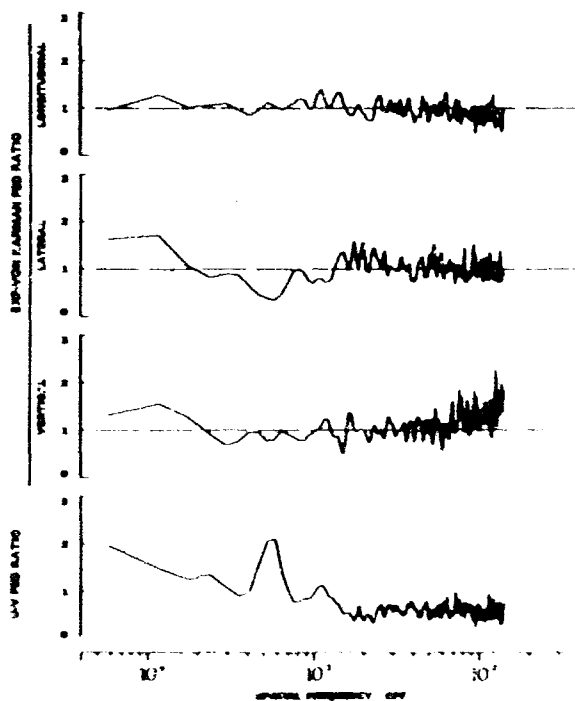
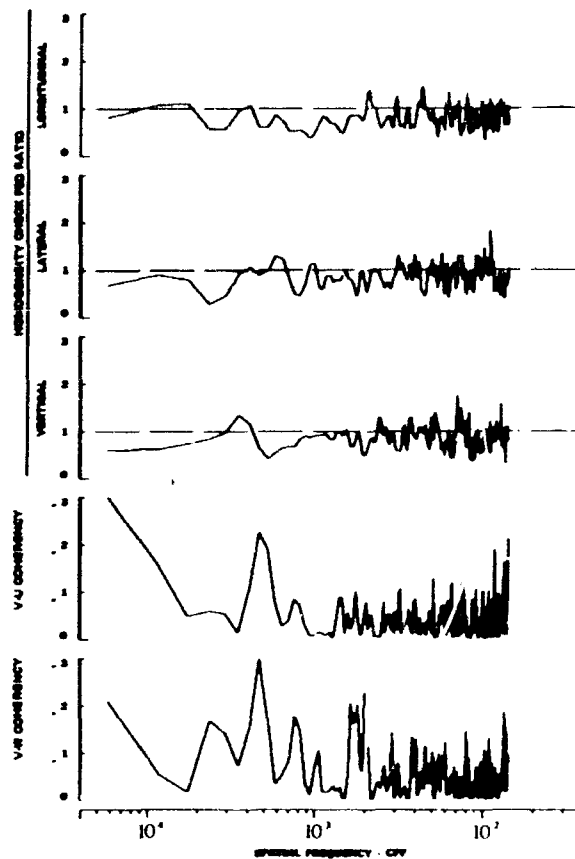
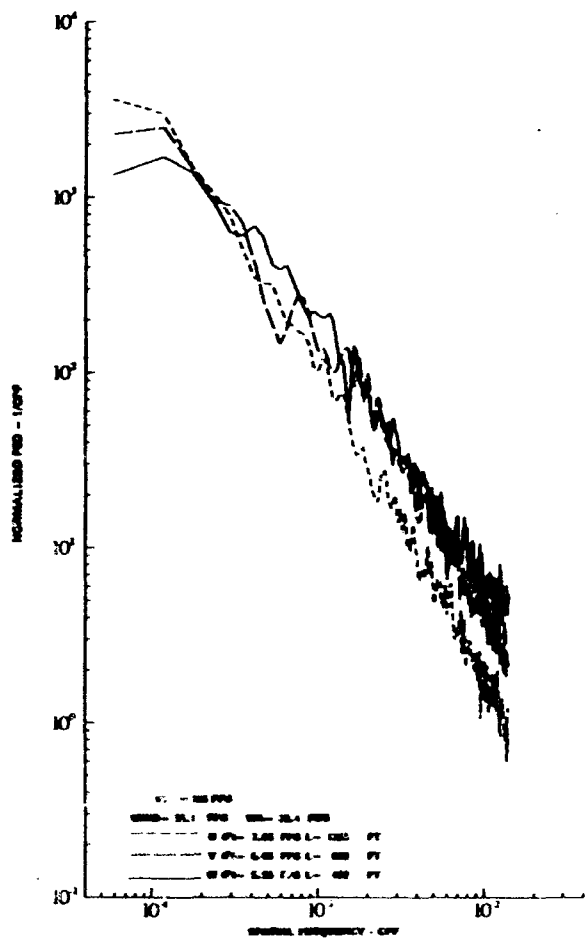


Turbulence Spectra Data For Test 246, Leg 6, Category 113213

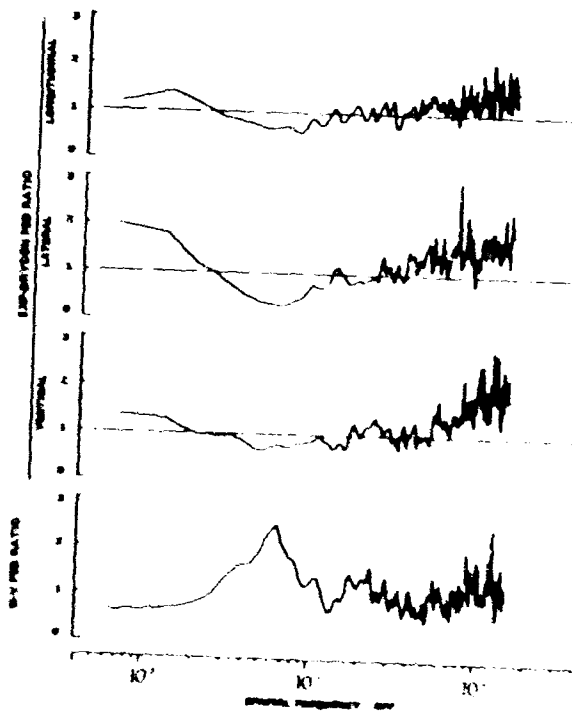
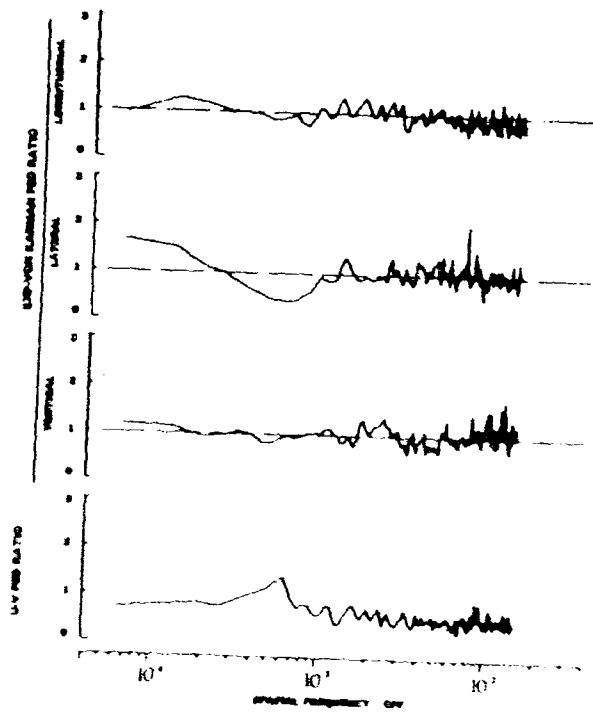
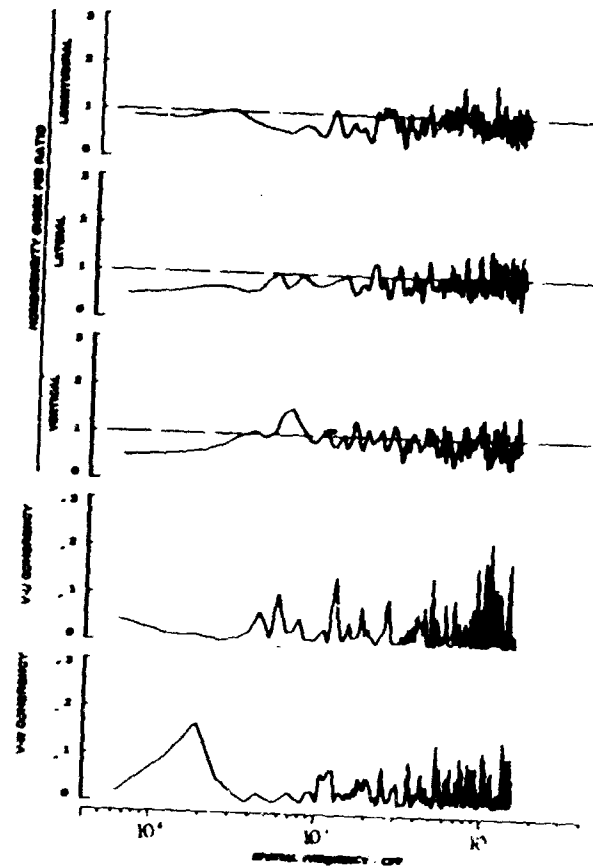
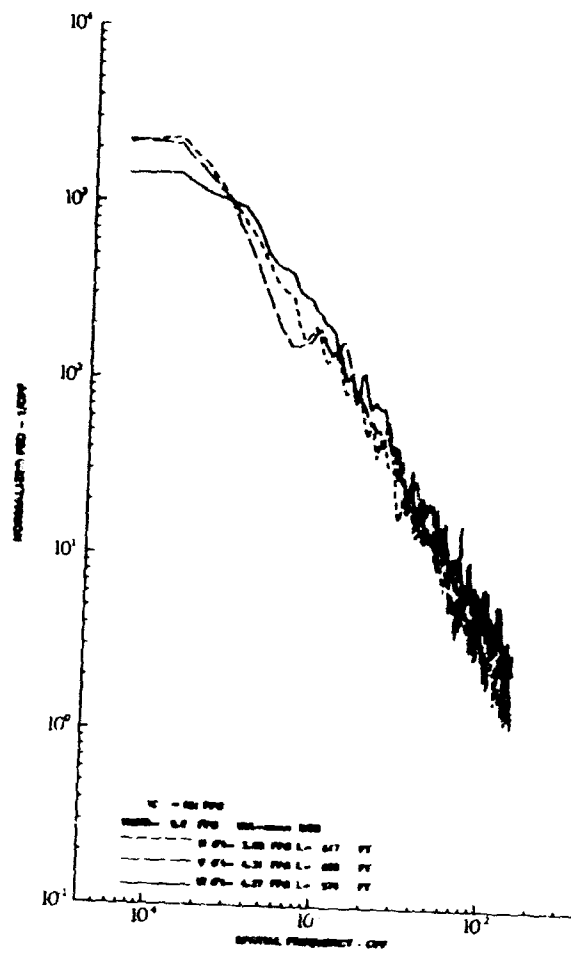




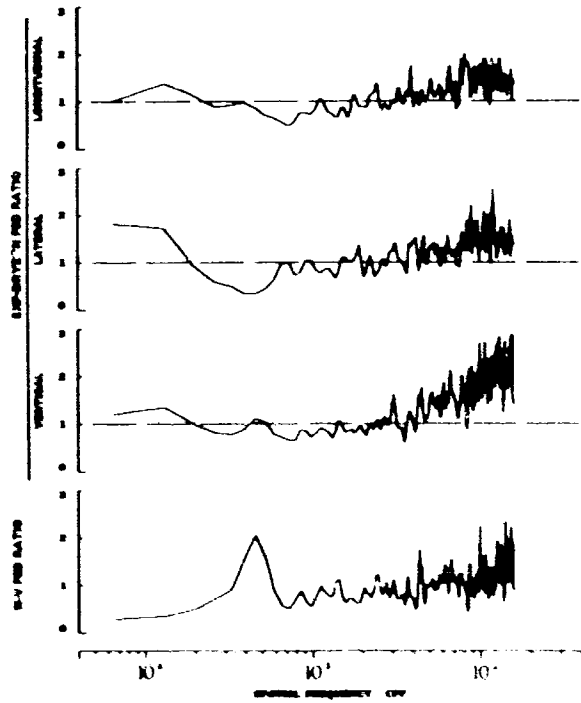
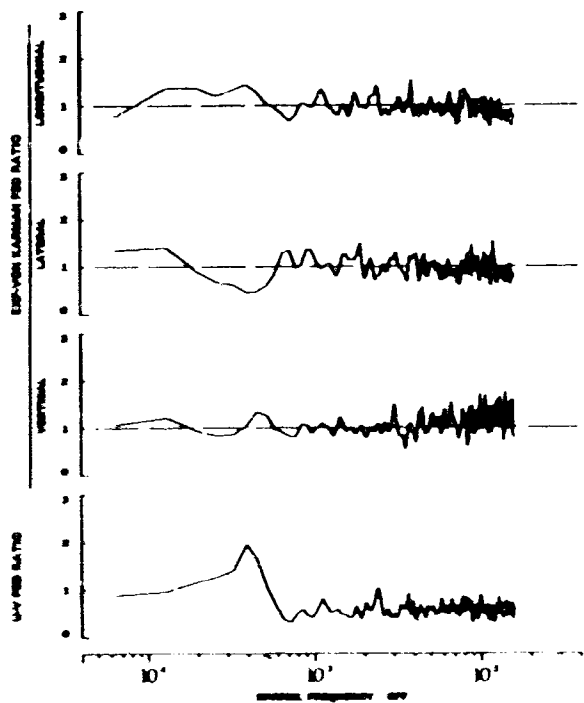
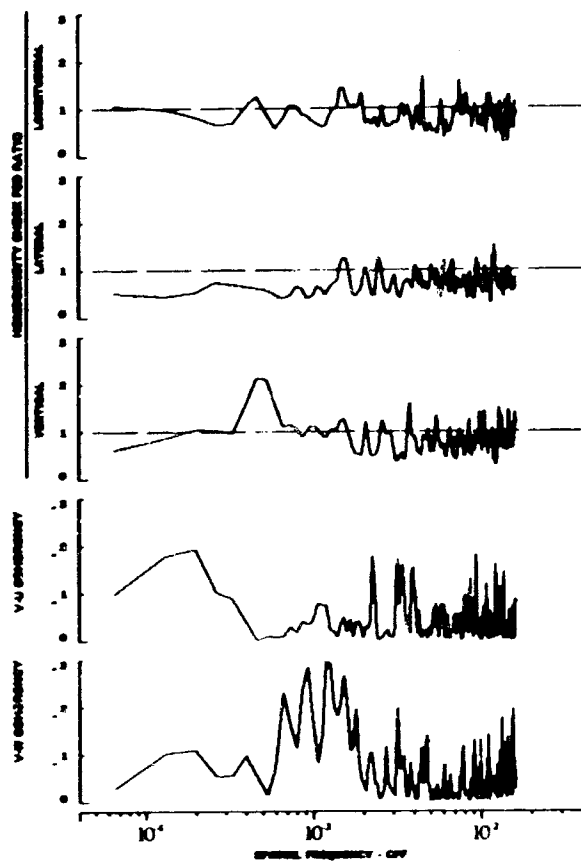
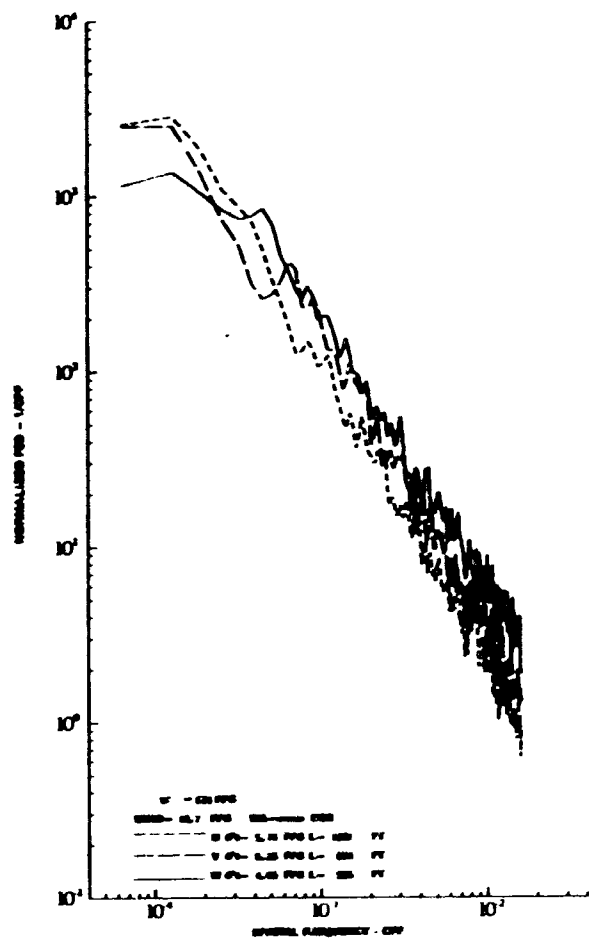
Turbulence Spectra Data For Test 248, Leg 4, Category 123213



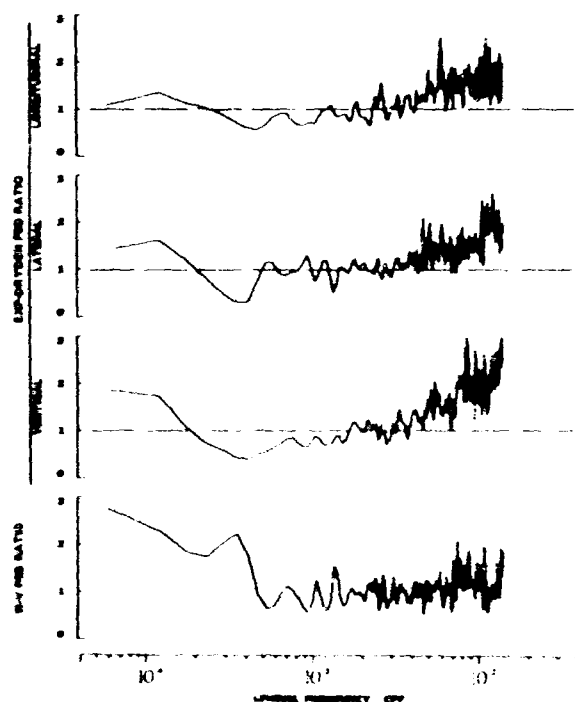
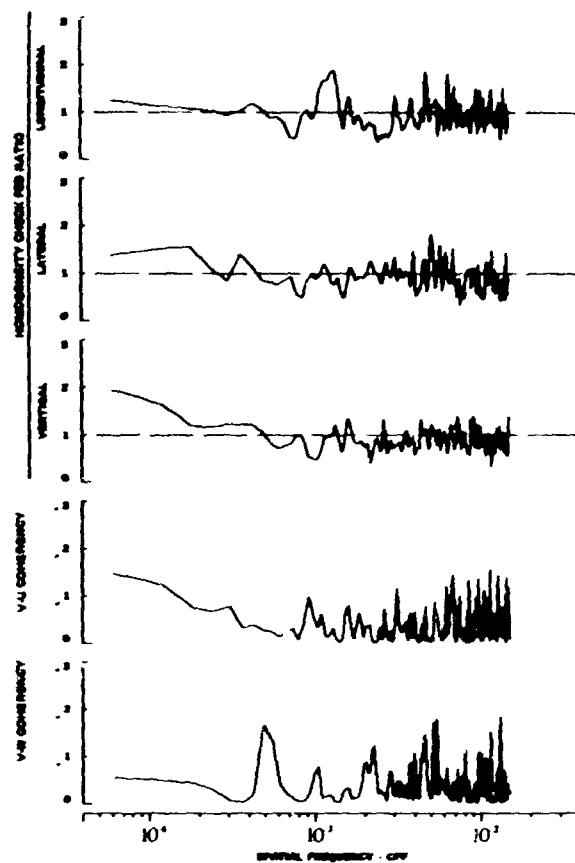
Turbulence Spectra Data for Test 248, Leg 6, Category 122213



Turbulence Spectra Data For Test 248, Log 8, Category 424213

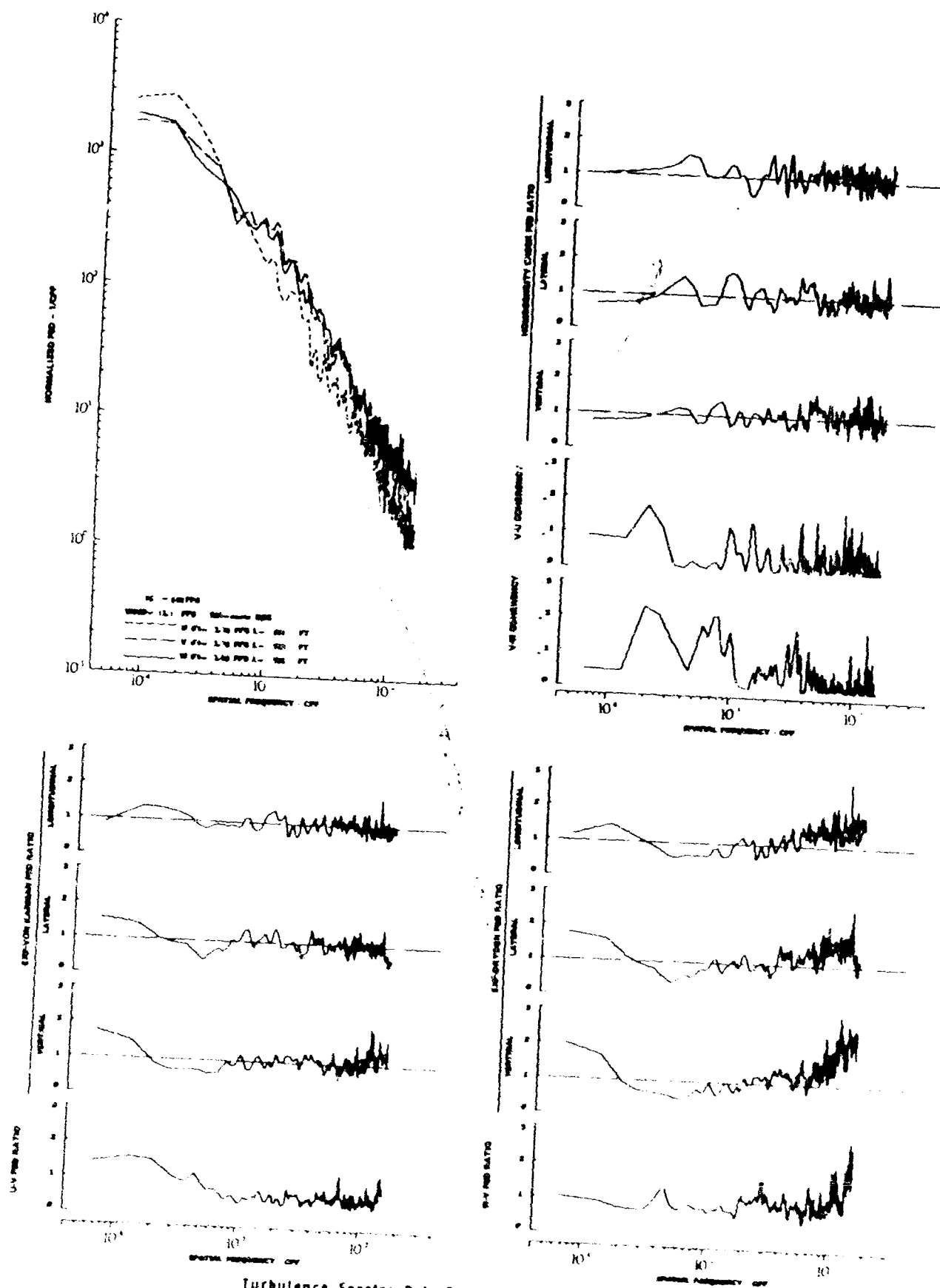


Turbulence Spectra Data For Test 249, Log 3, Category 122313



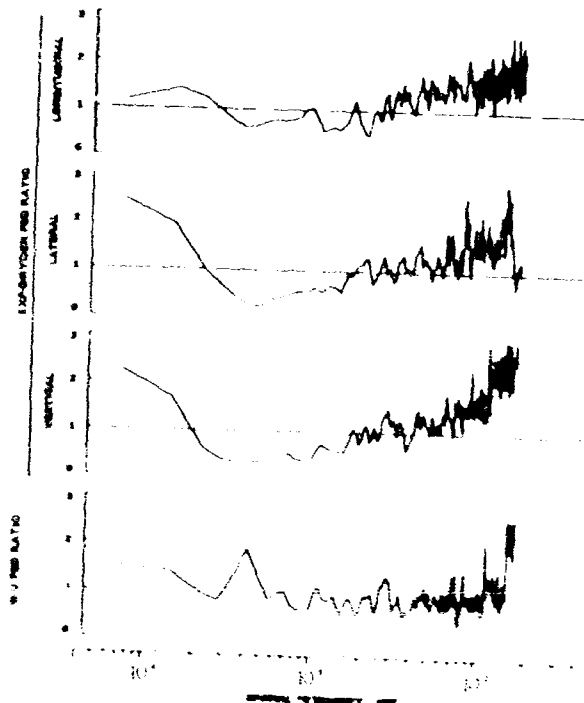
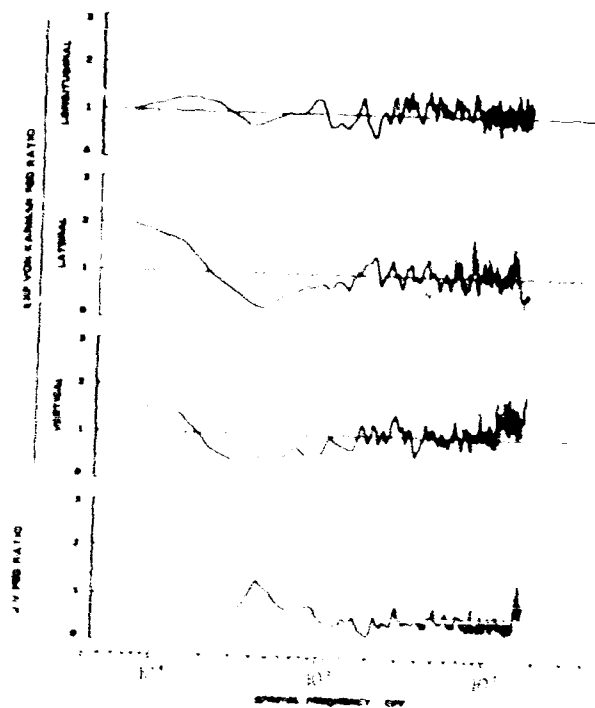
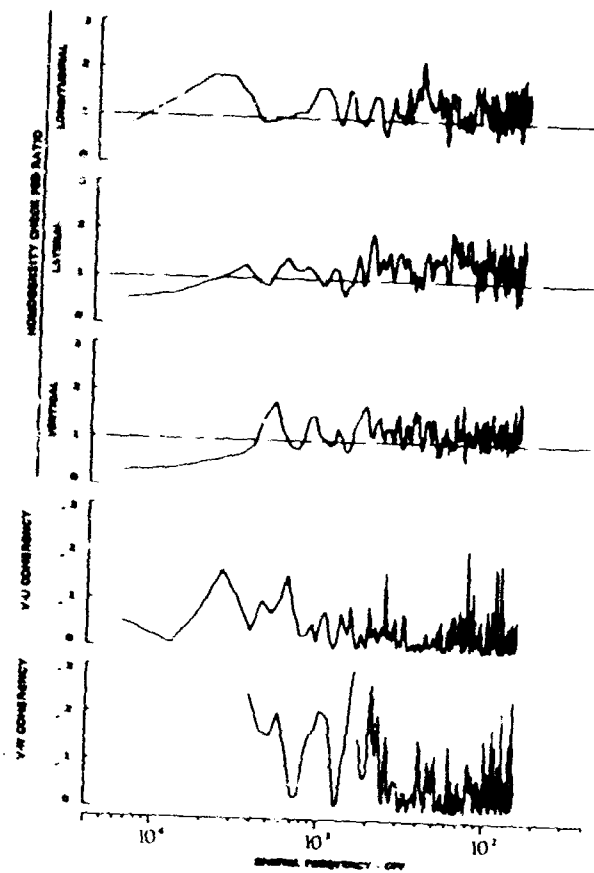
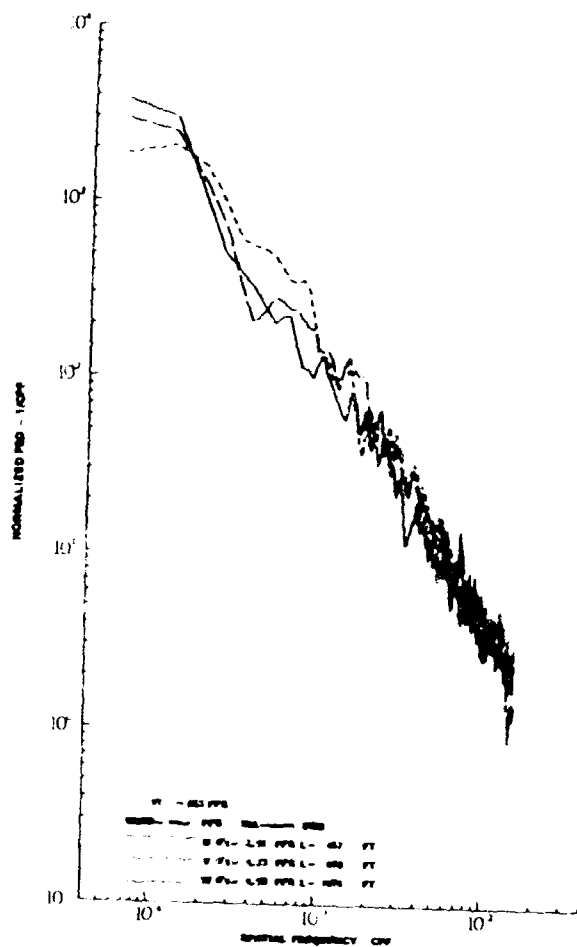






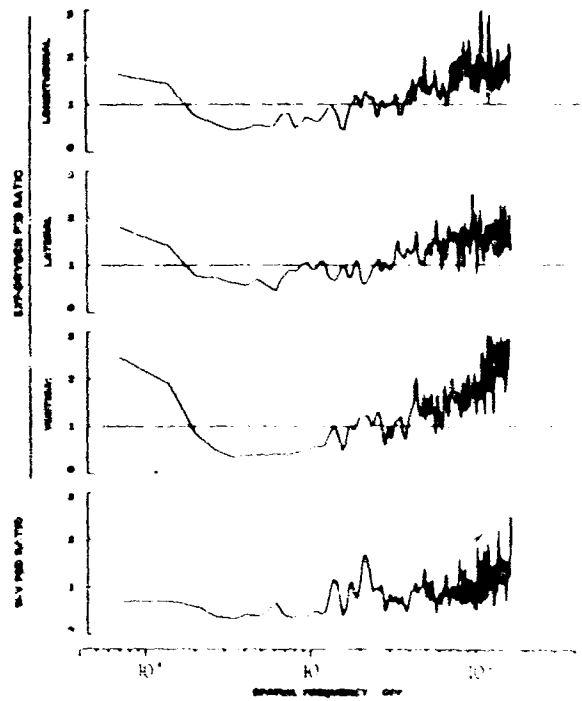
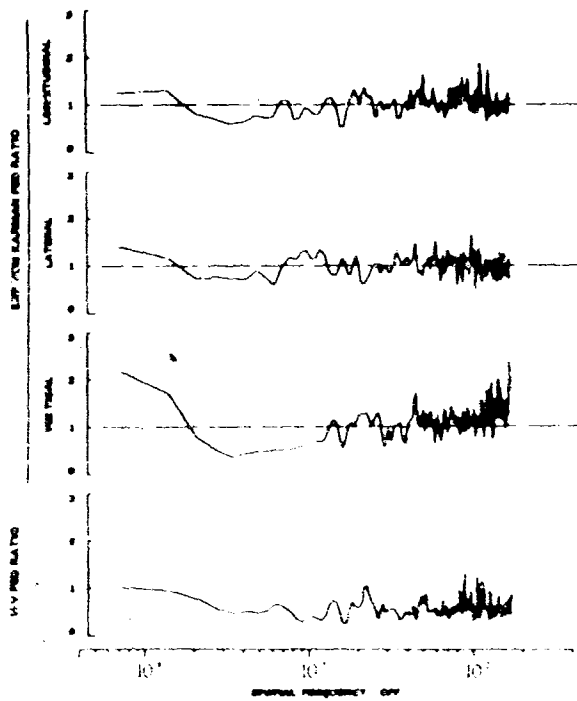
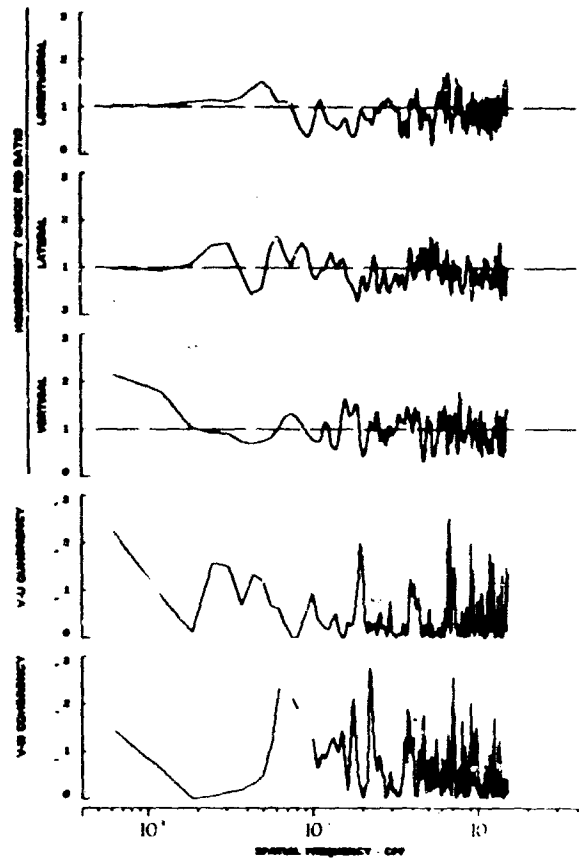
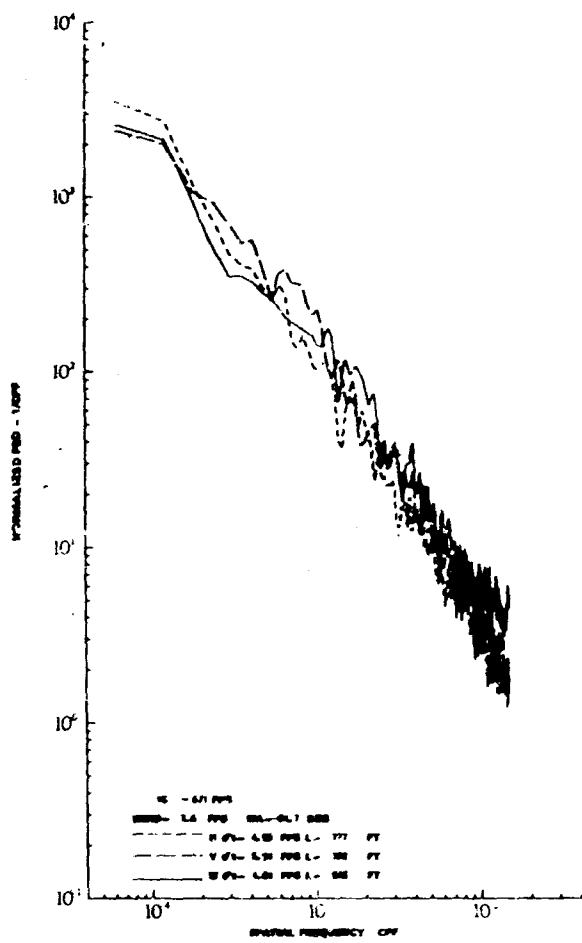
Turbulence Spectra Data For Test 253, Leg 1, Category 122313



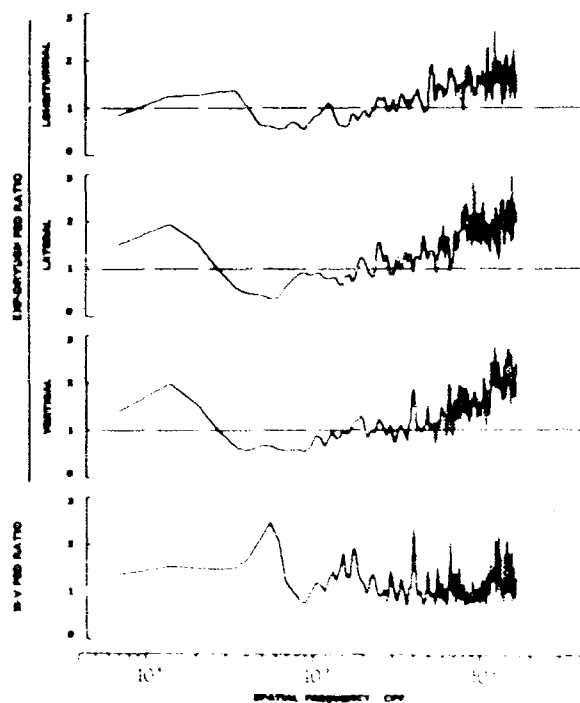
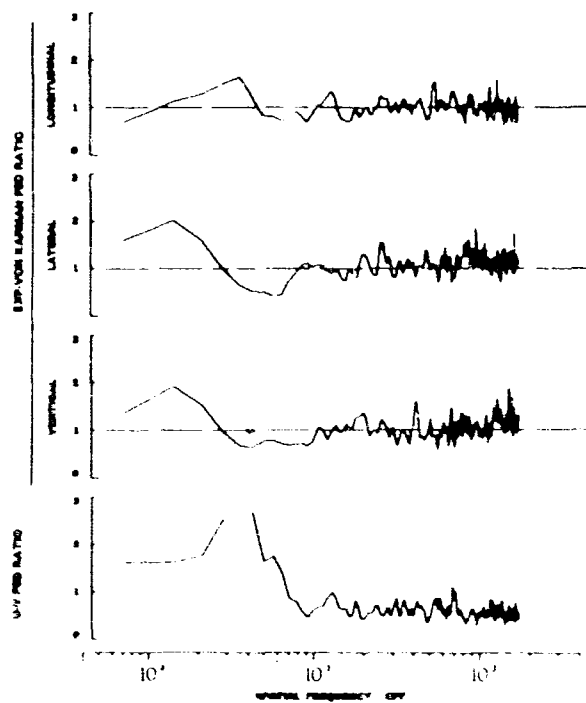
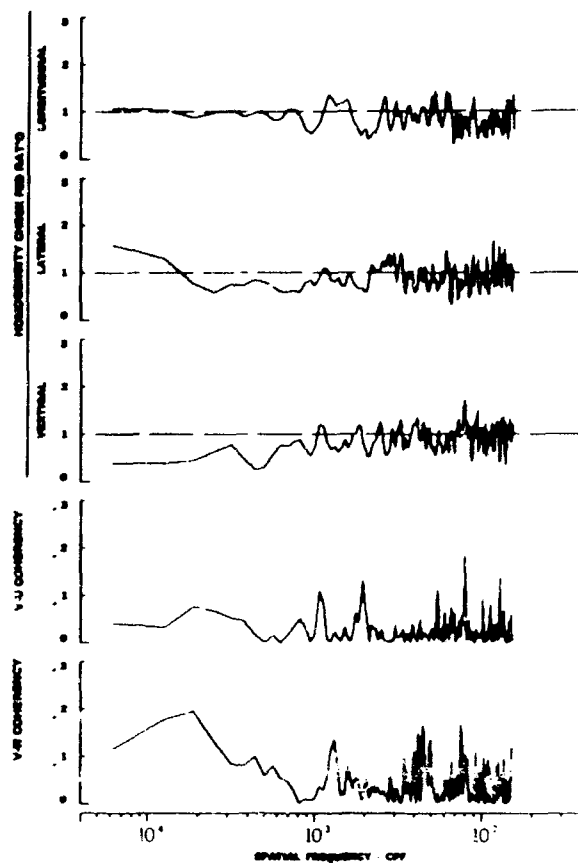
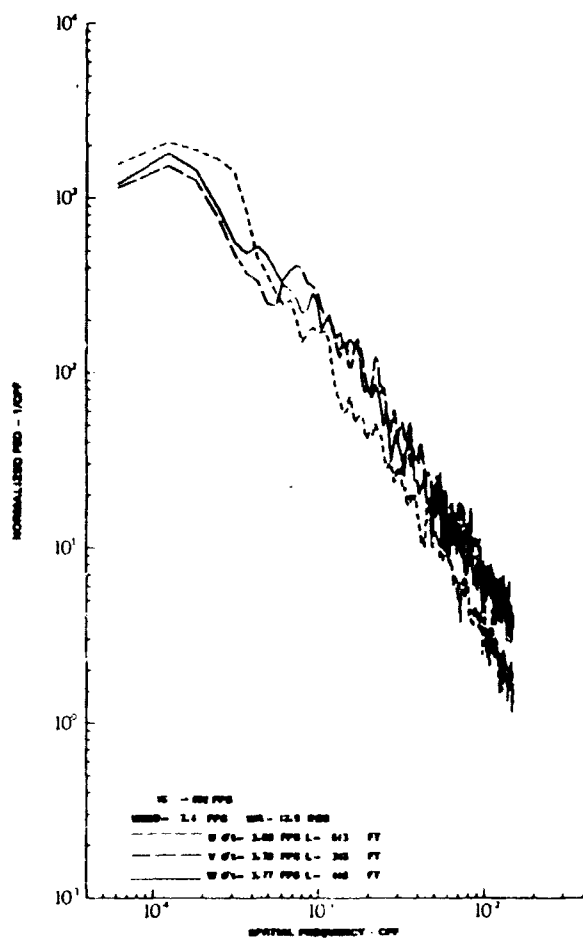


Turbulence Spectra Data For Test 255, Leg 1, Category 112213

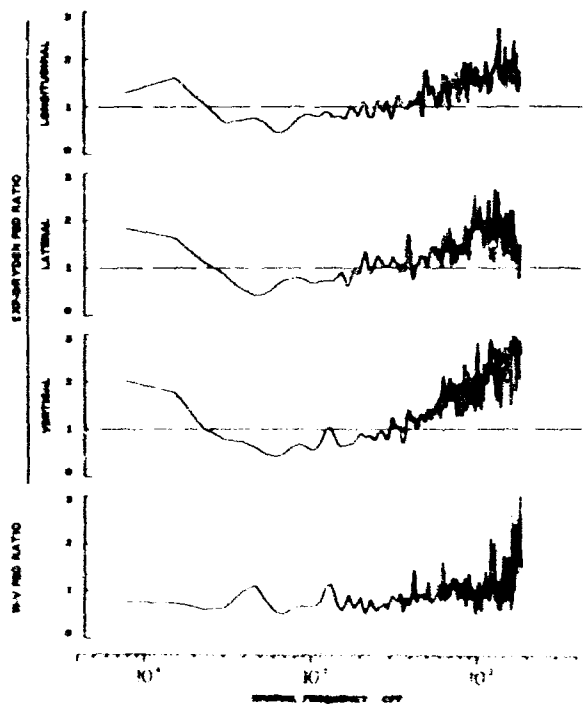
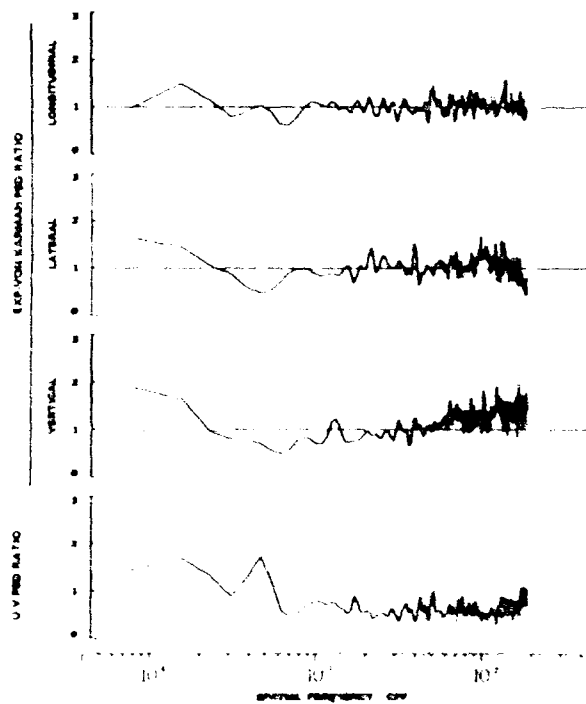
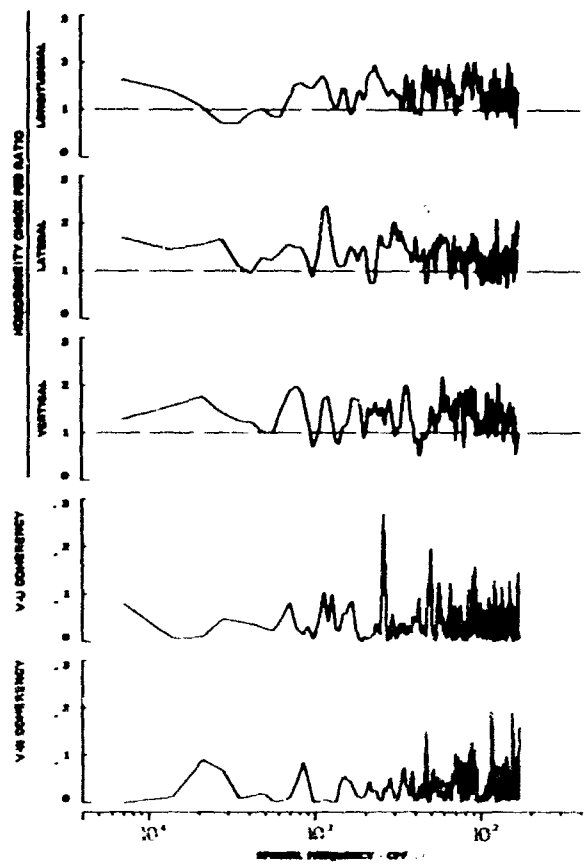
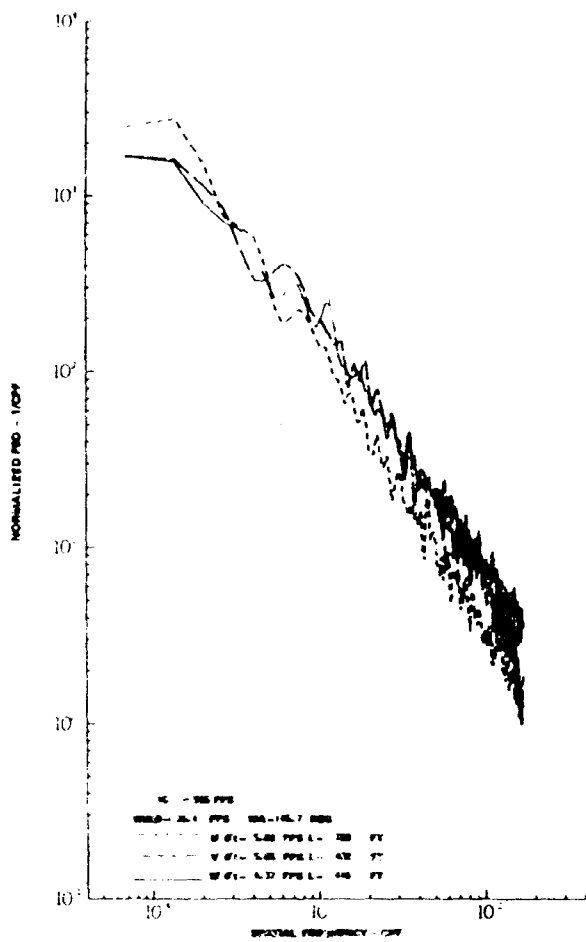




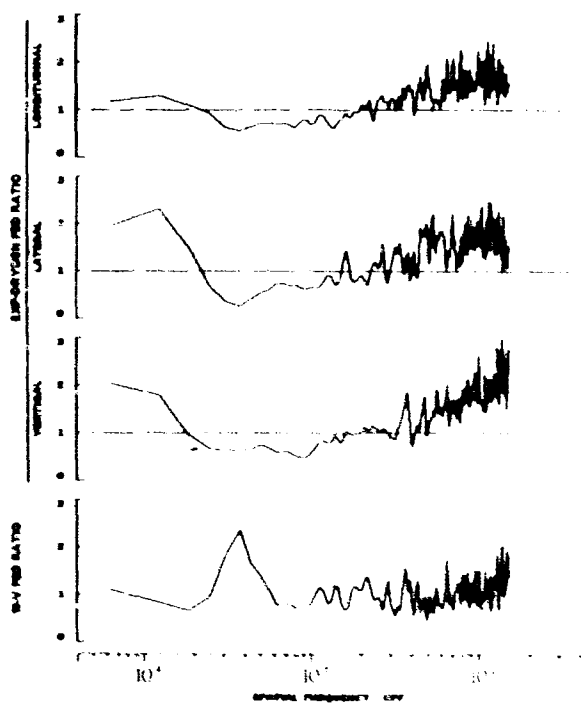
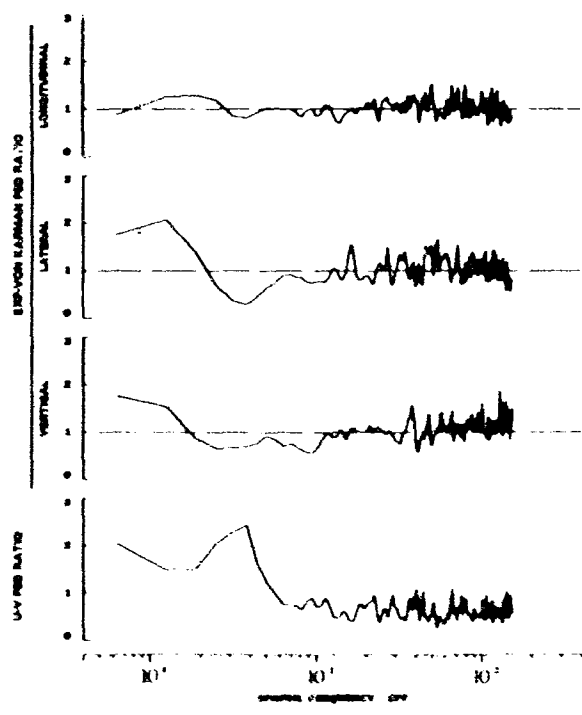
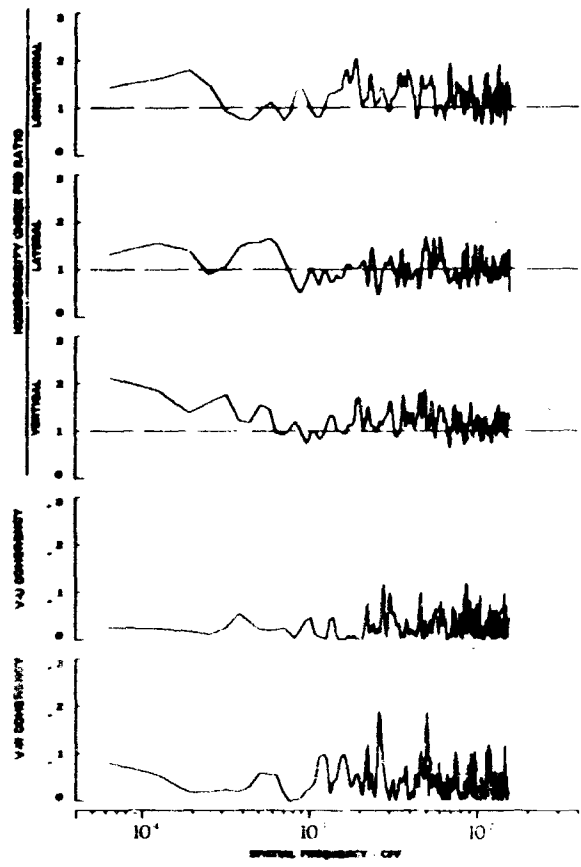
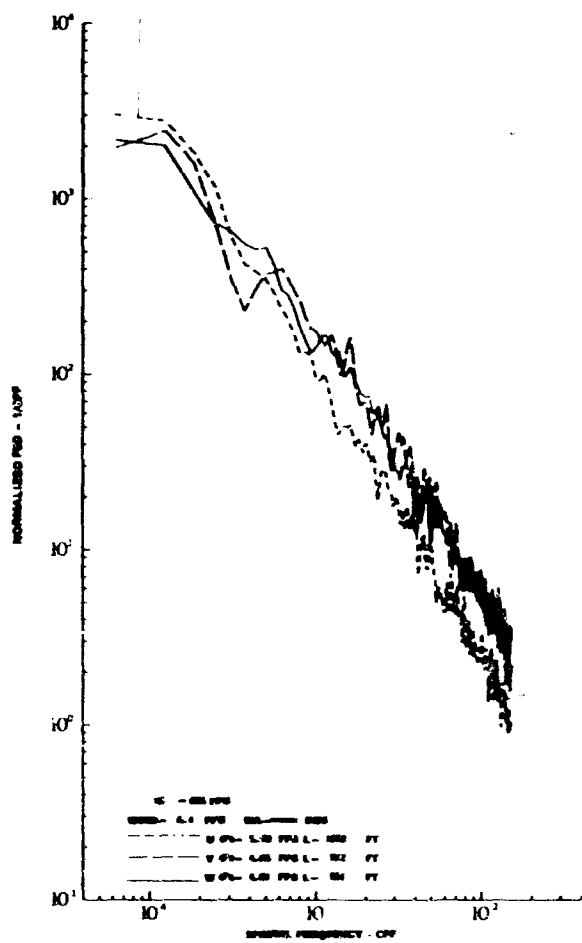
Turbulence Spectra Data For Test 255, Leg 5, Category 112213



Turbulence Spectra Data For Test 755, Leg 7, Category 113213

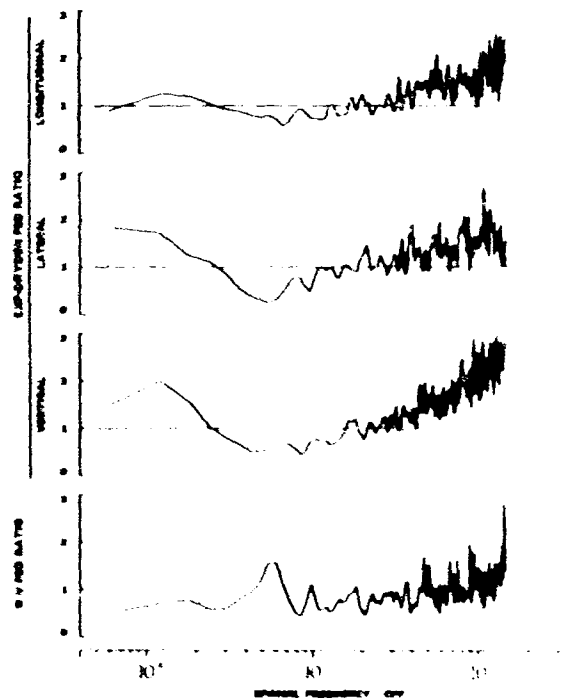
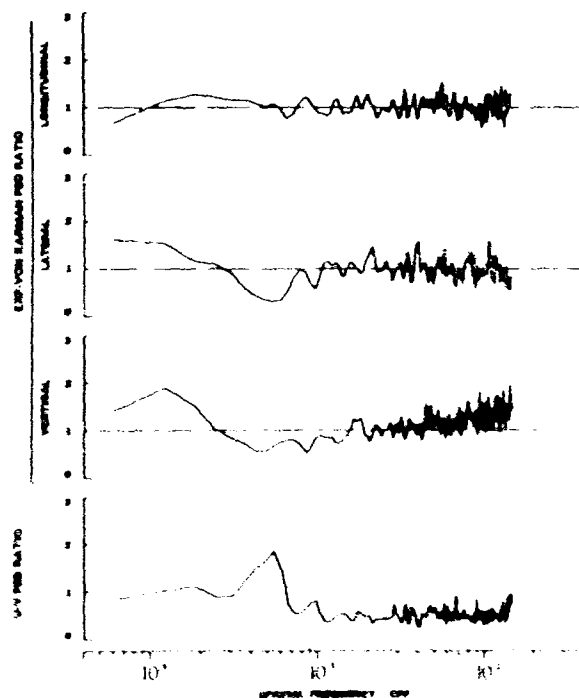
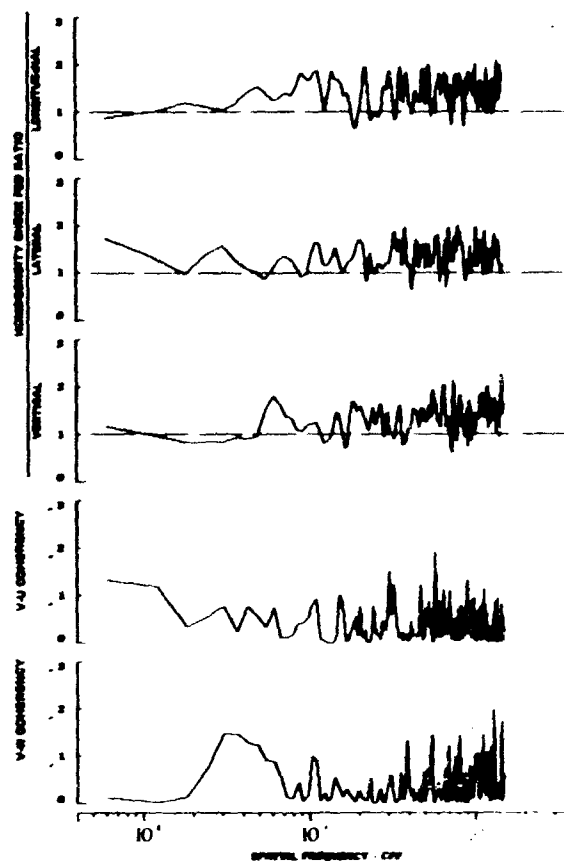


Turbulence Spectra Data for Test 256, Leg 2, Category 113313

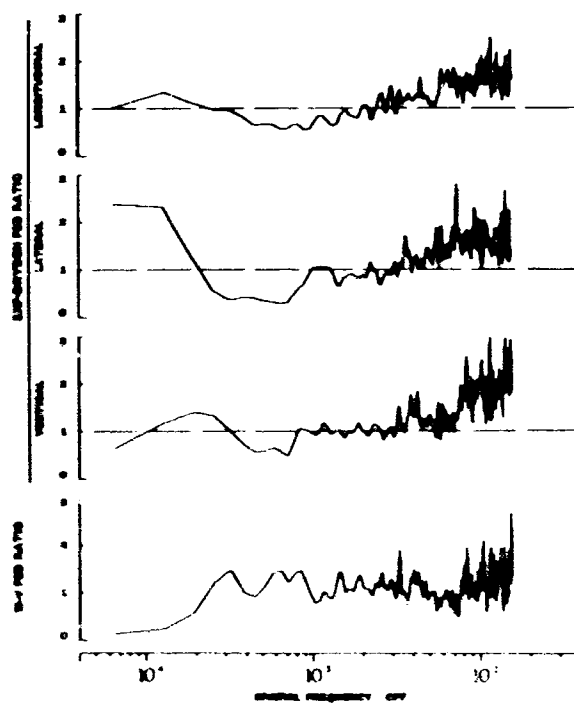
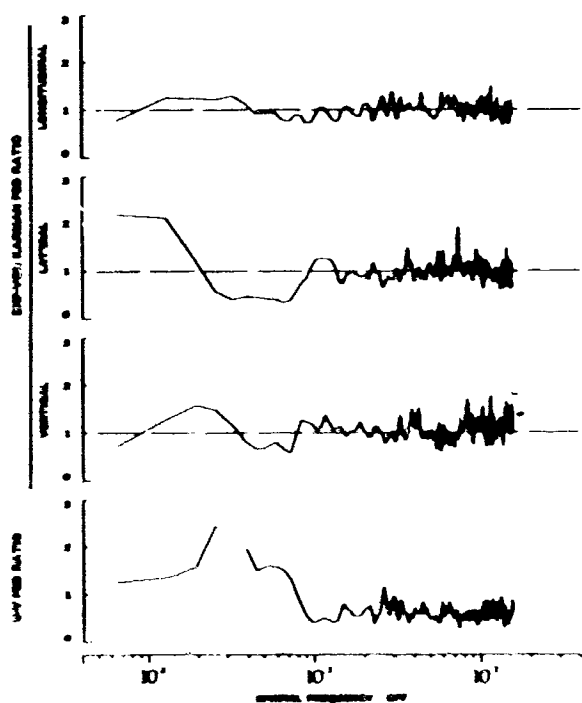
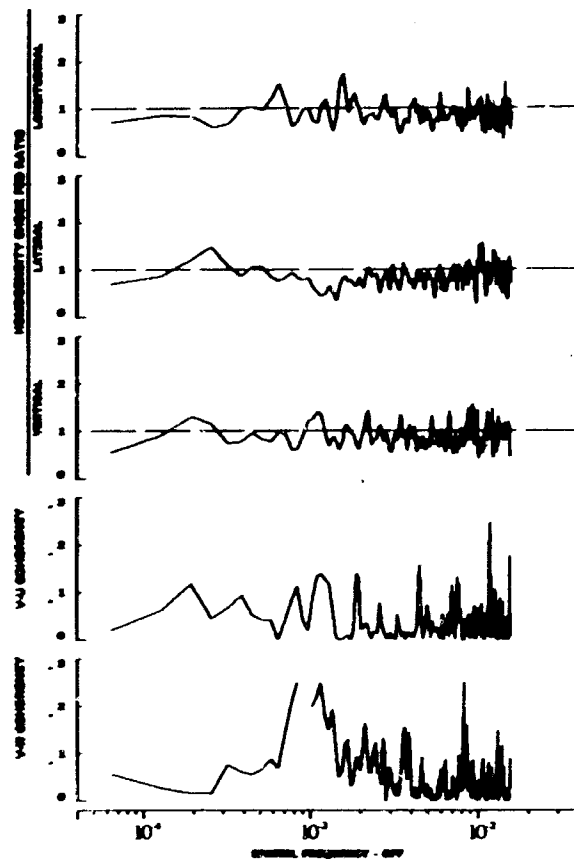
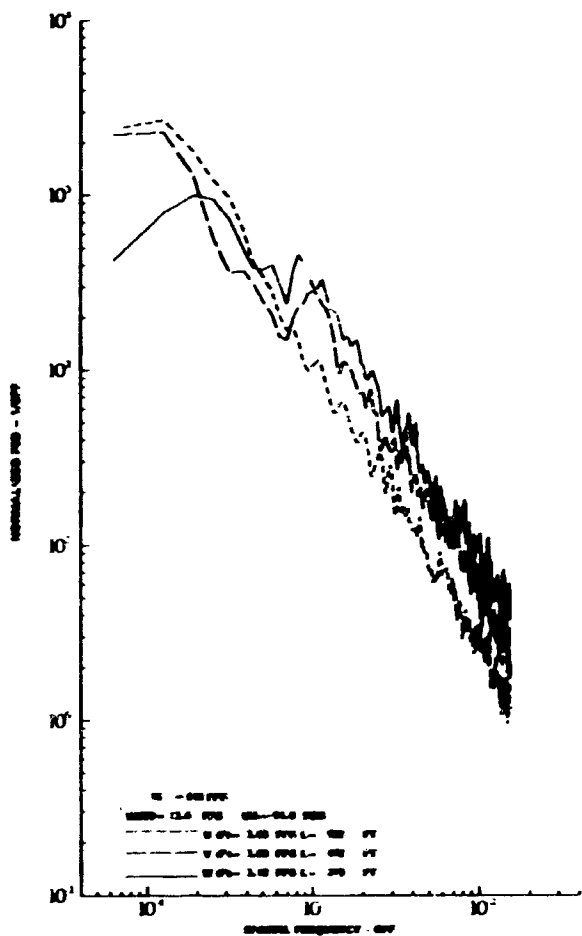


Turbulence Spectra Data For Test 256, Leg 4, Category 113313

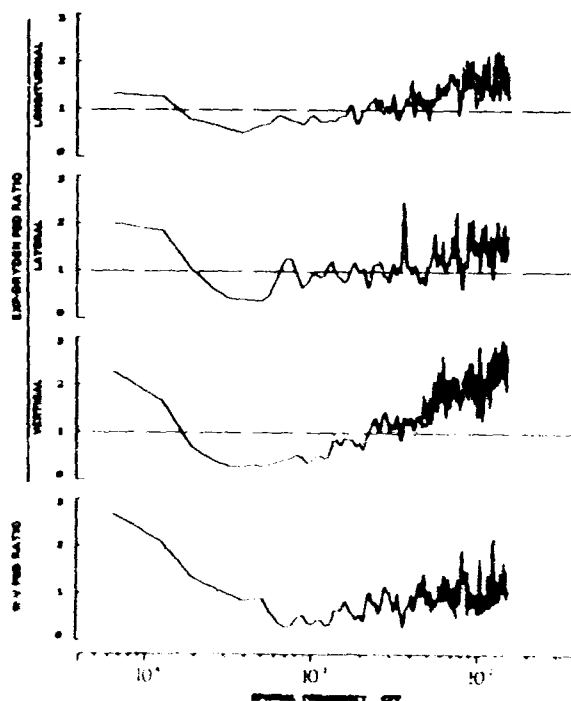
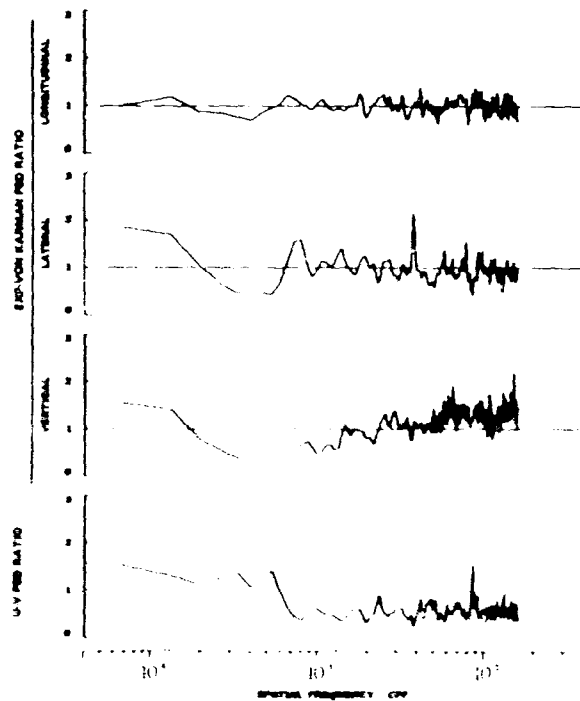
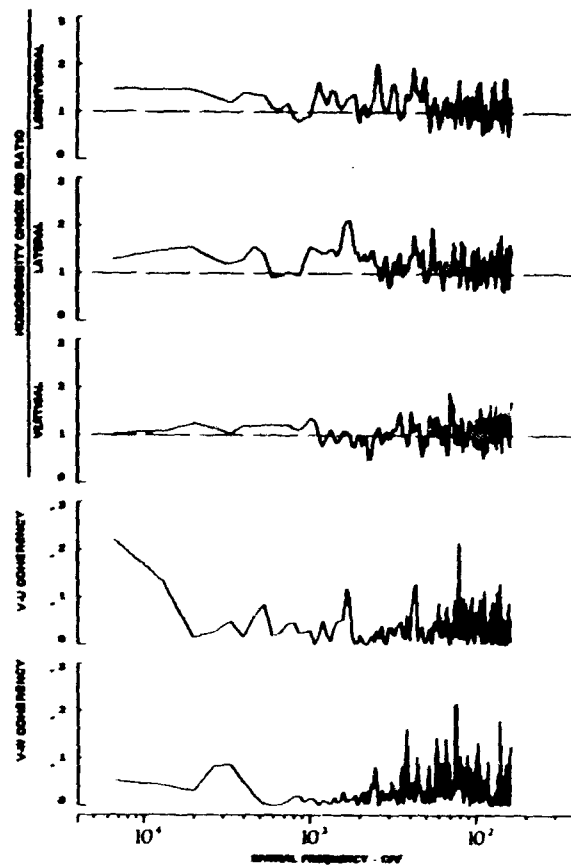
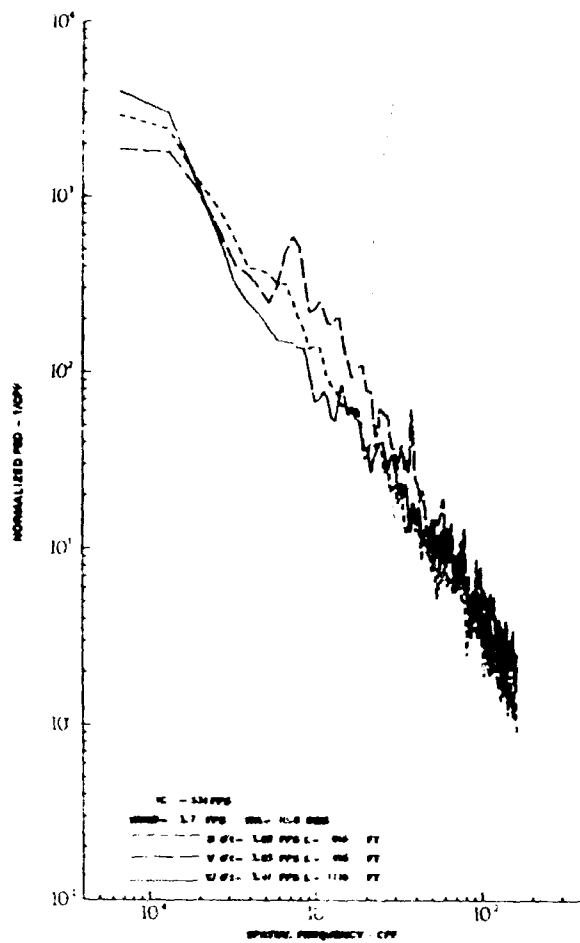




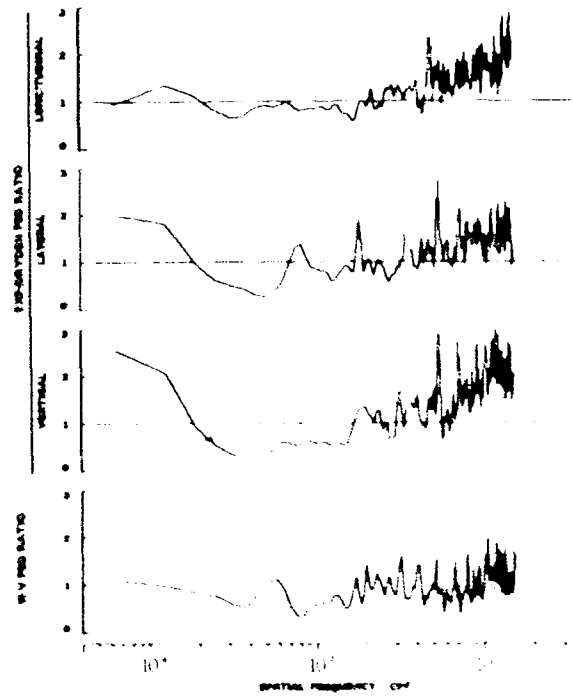
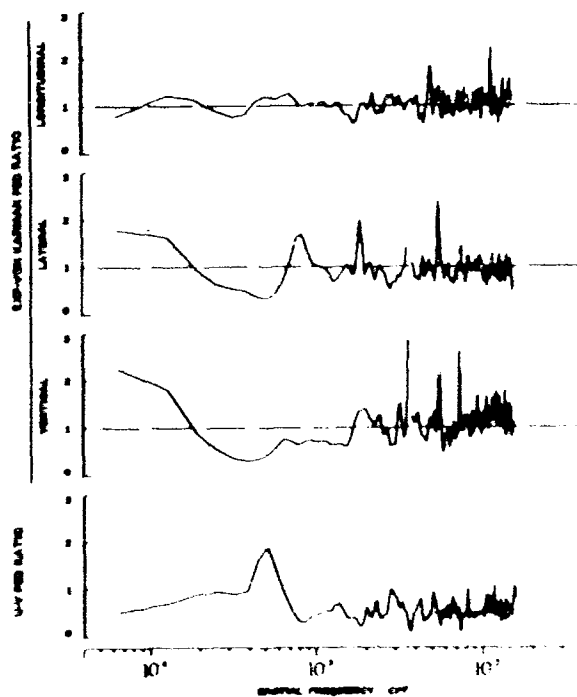
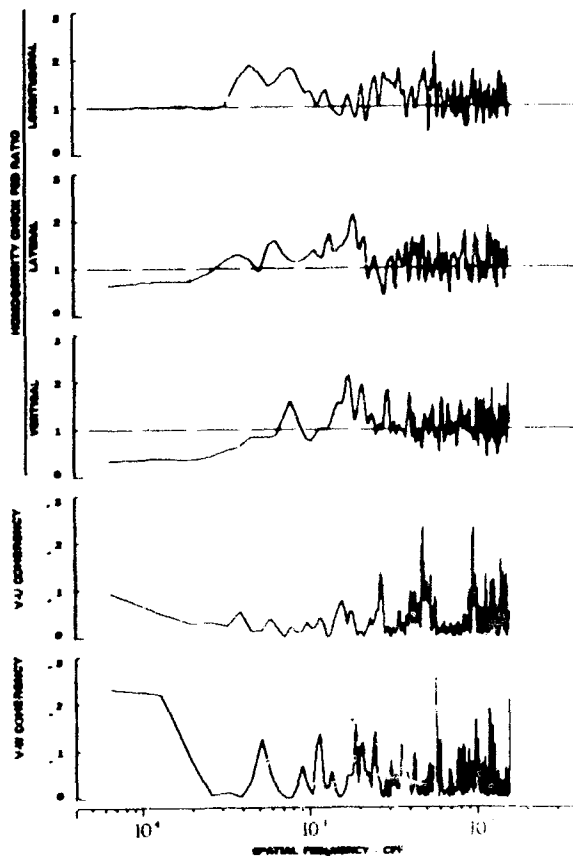
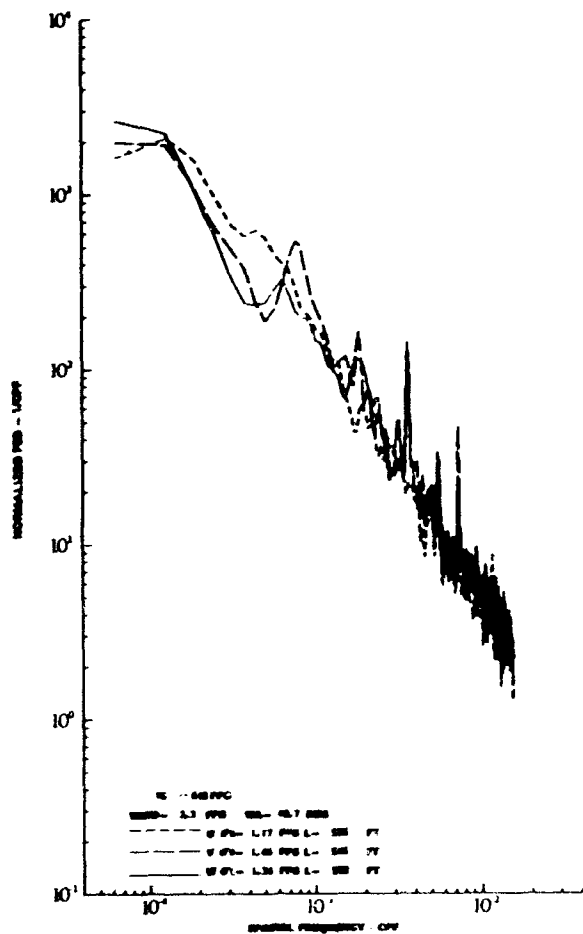
376



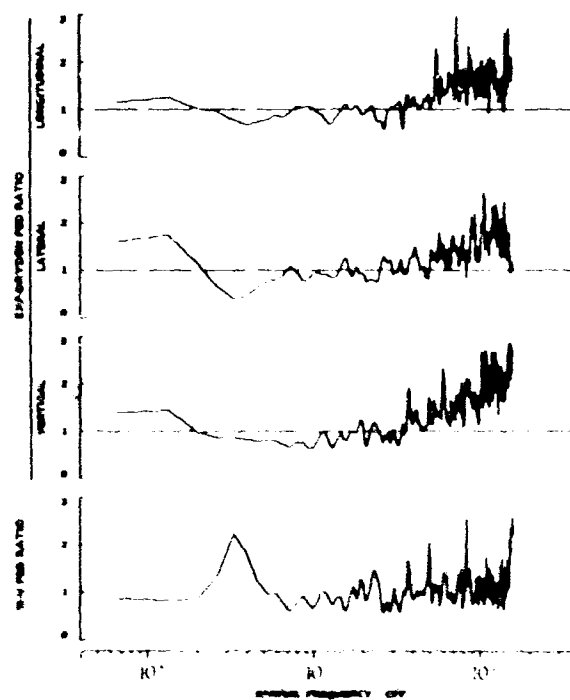
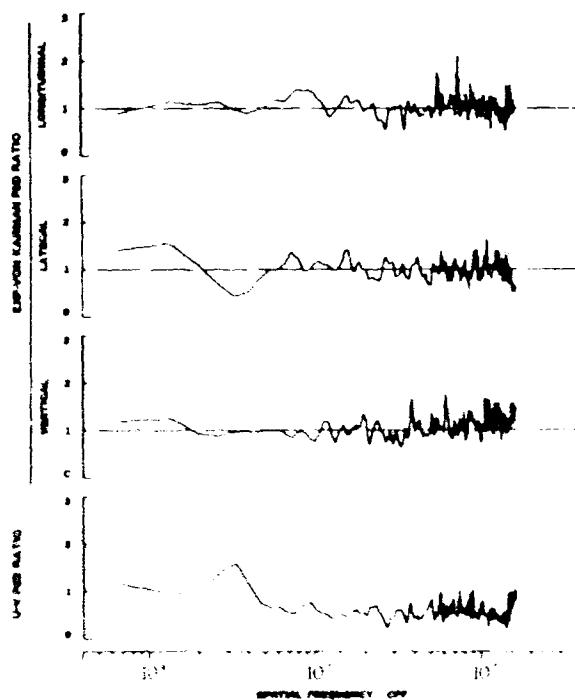
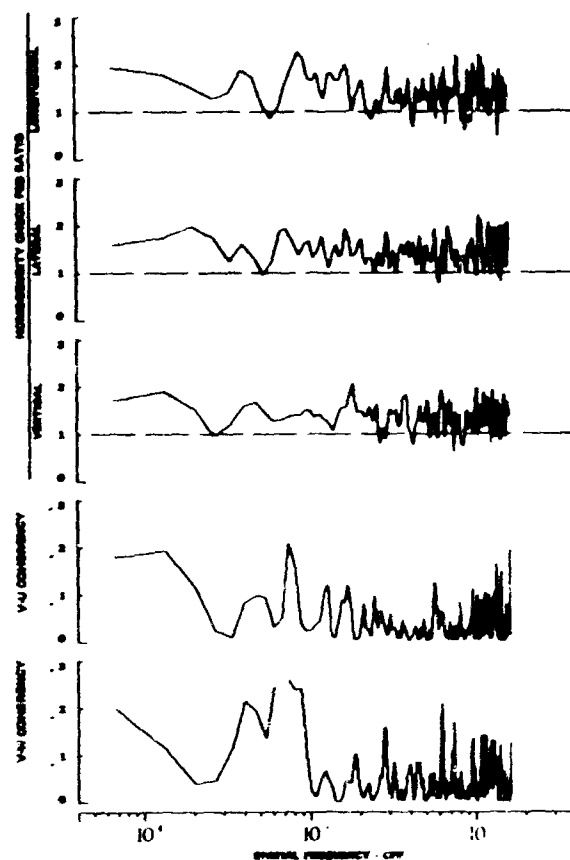
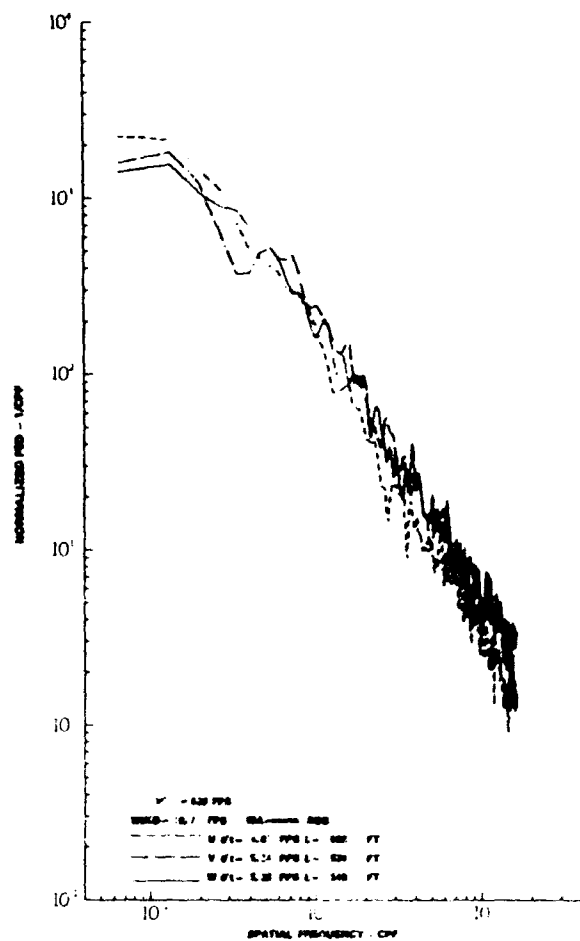
Turbulence Spectra Data For Test 256, Log 8, Category 414313



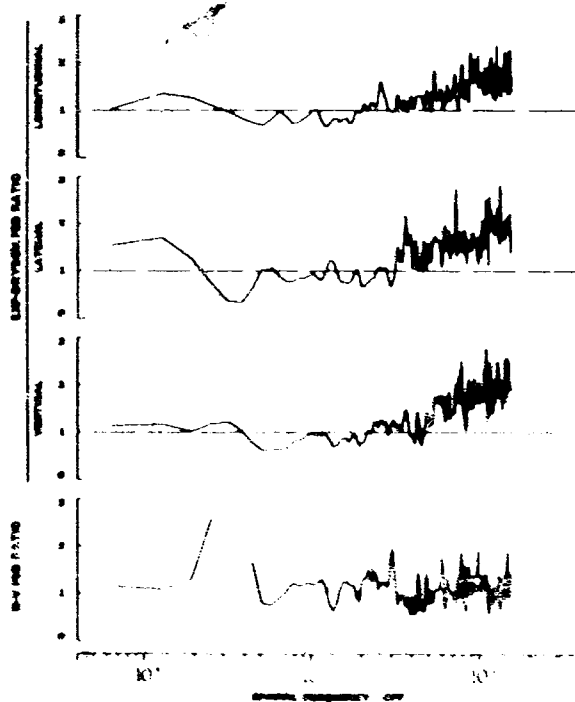
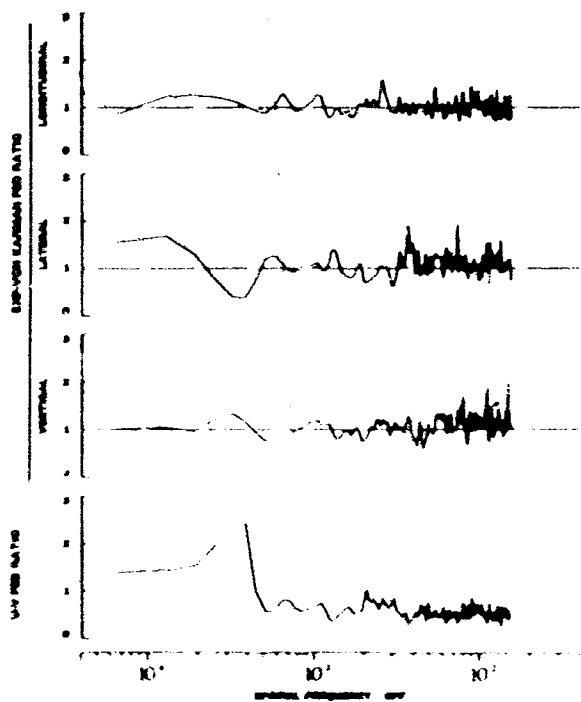
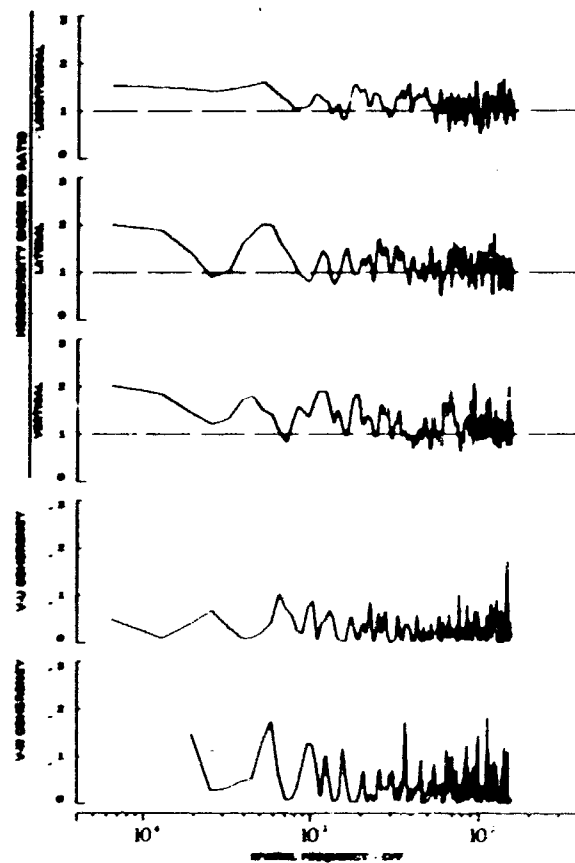
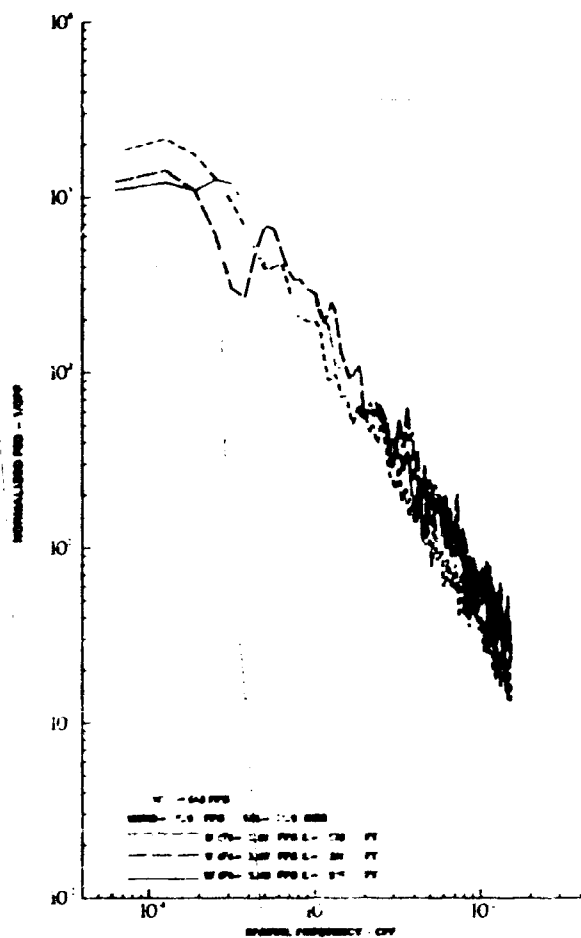
Turbulence Spectra Data For Test 257, Leg 5, Category 121113



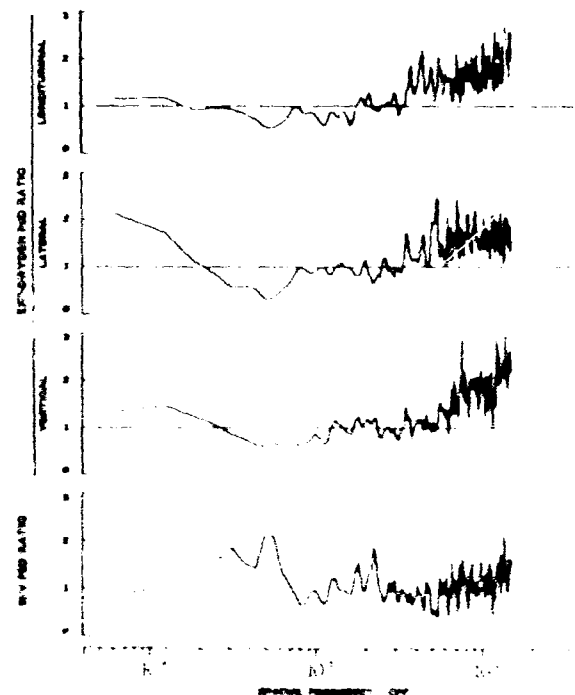
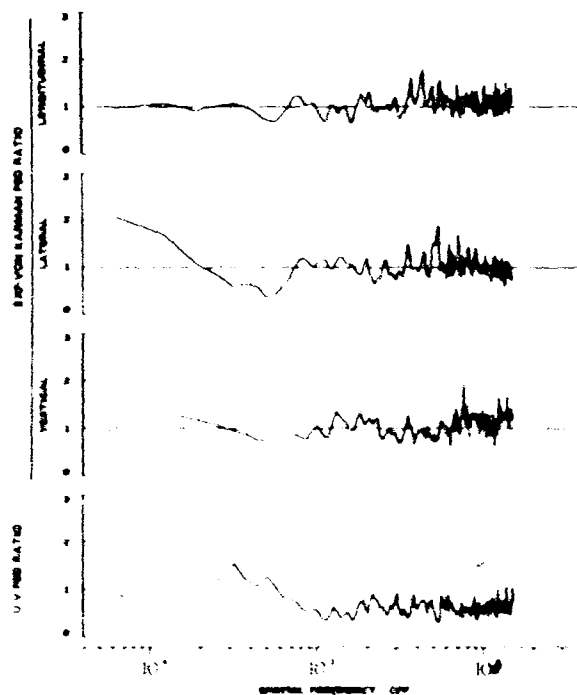
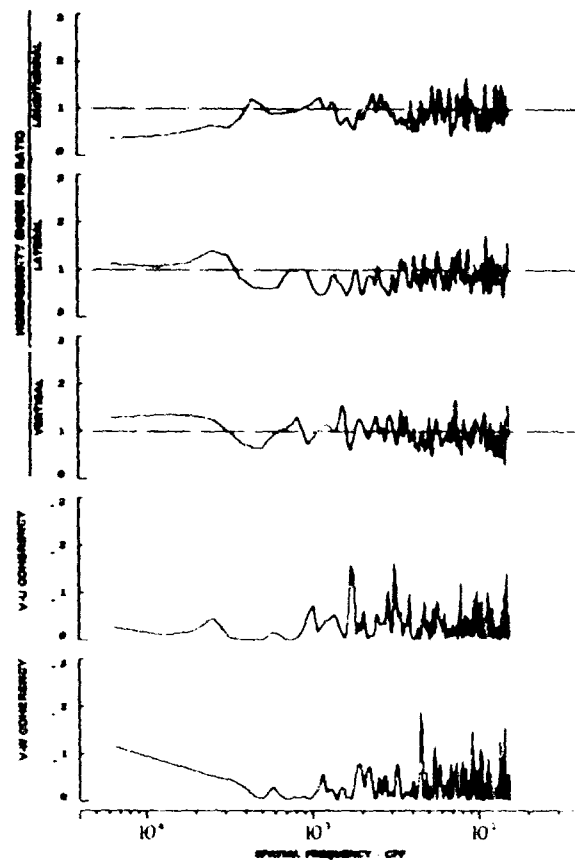
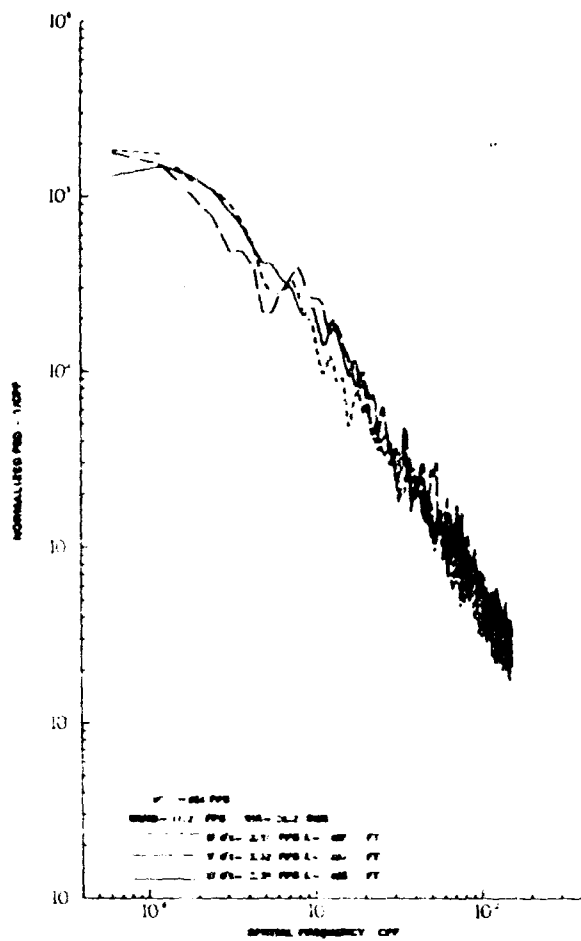
Turbulence Spectra Data For Test 257, Leg 7, Category 122113



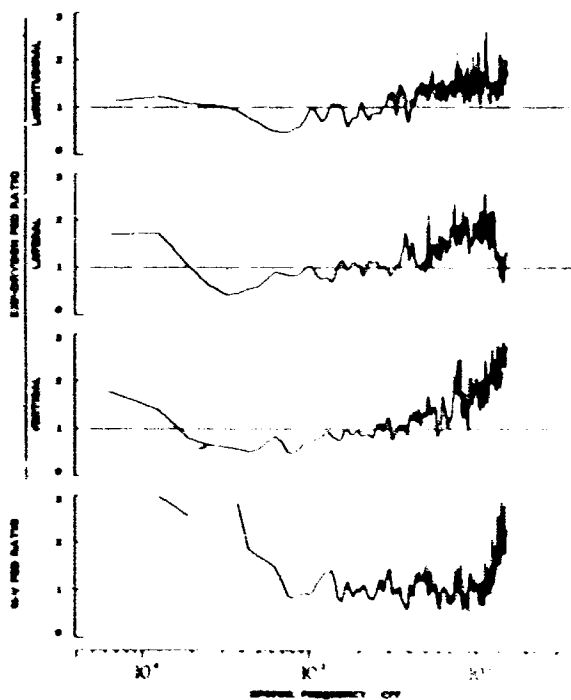
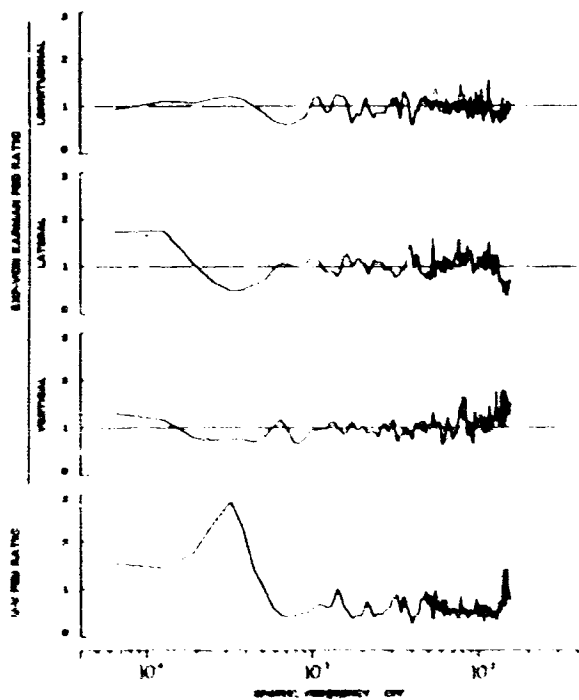
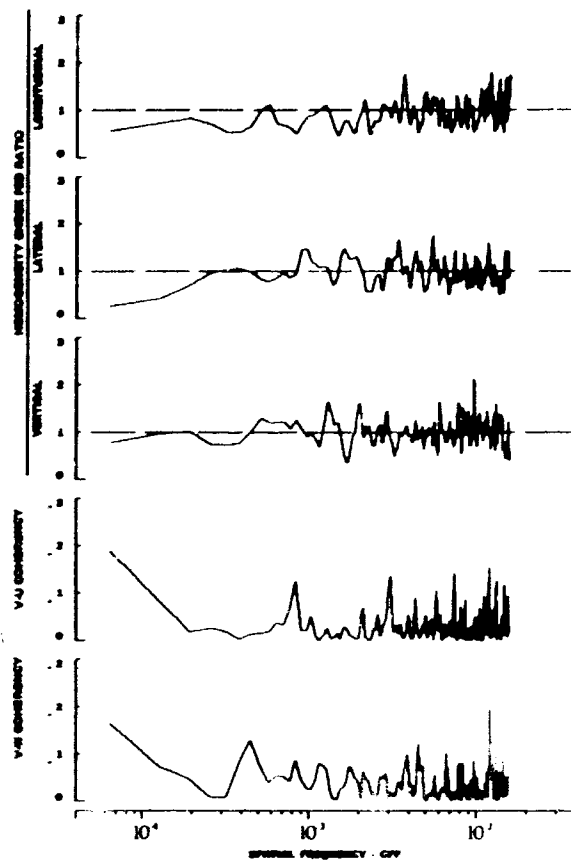
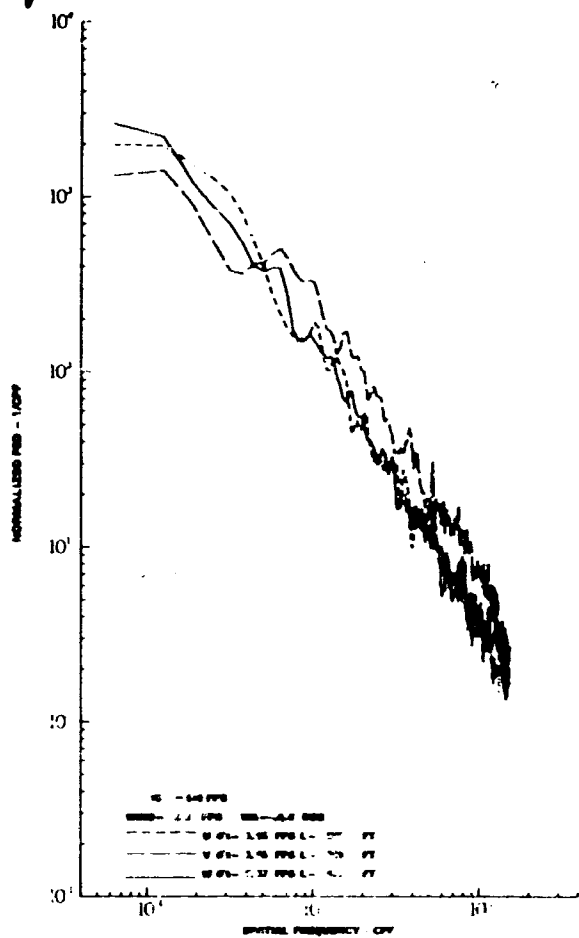
Turbulence Spectra Data for Test 258, Leg 2, Category 124213



Turbulence Spectra Data For Test 258, Leg 4, Category 122213

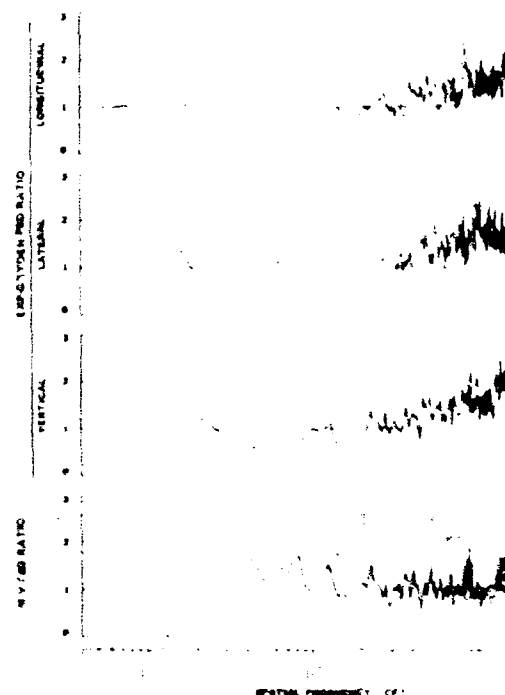
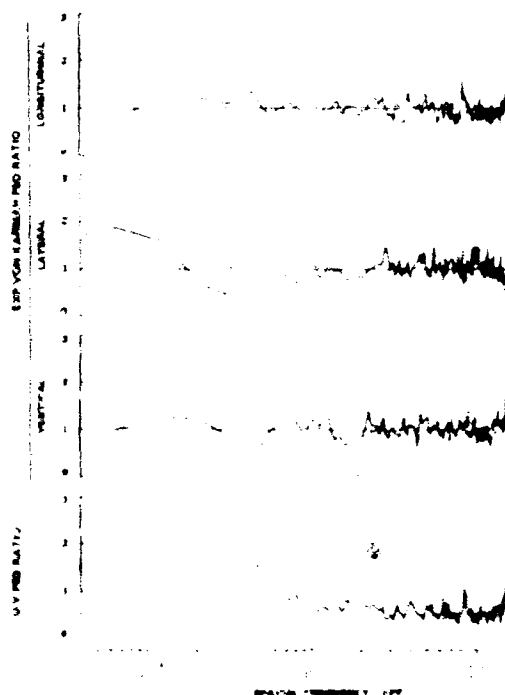
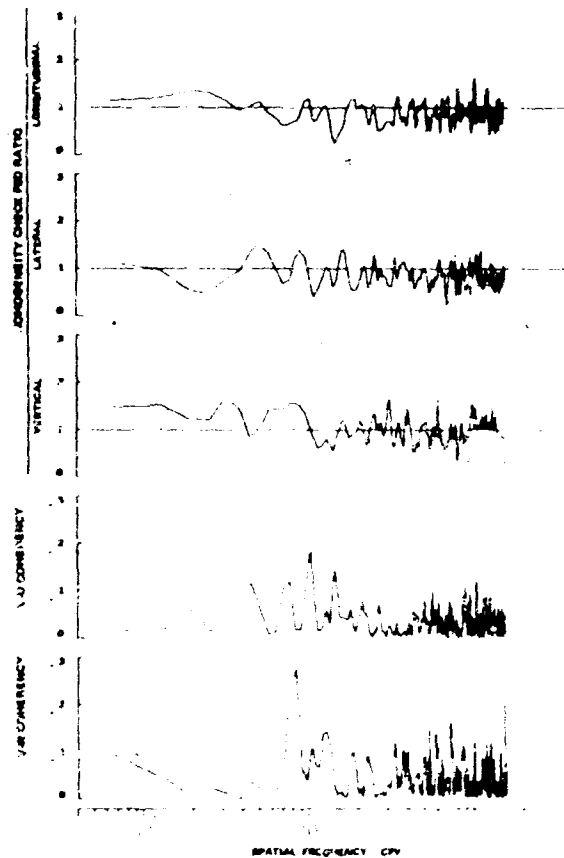
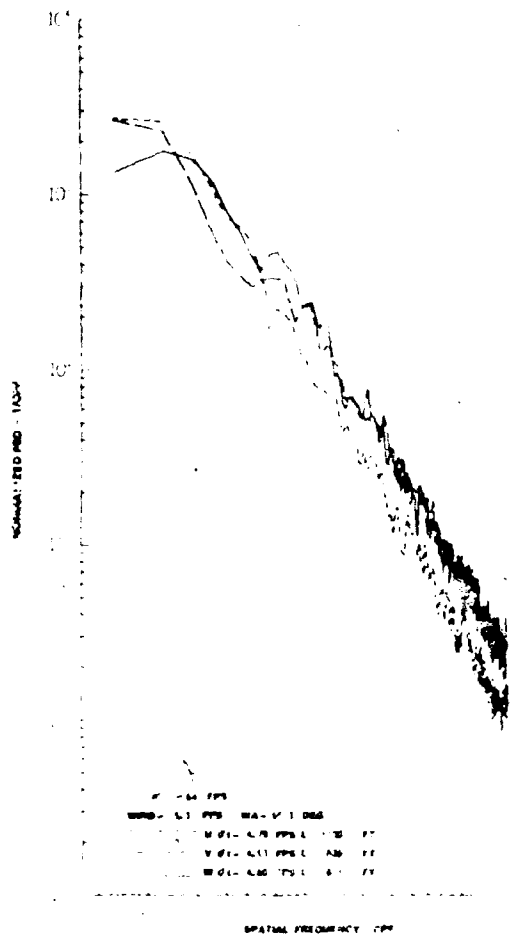


Turbulence Spectra Data for Test 258, Leg 6, Category 122713

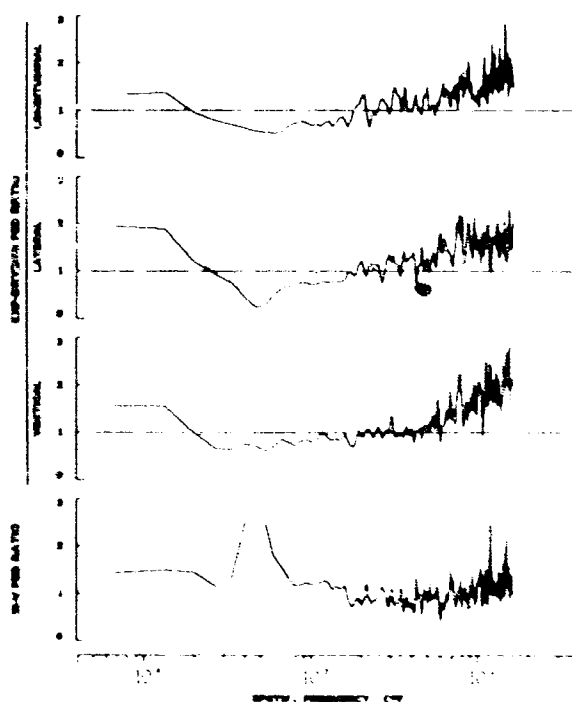
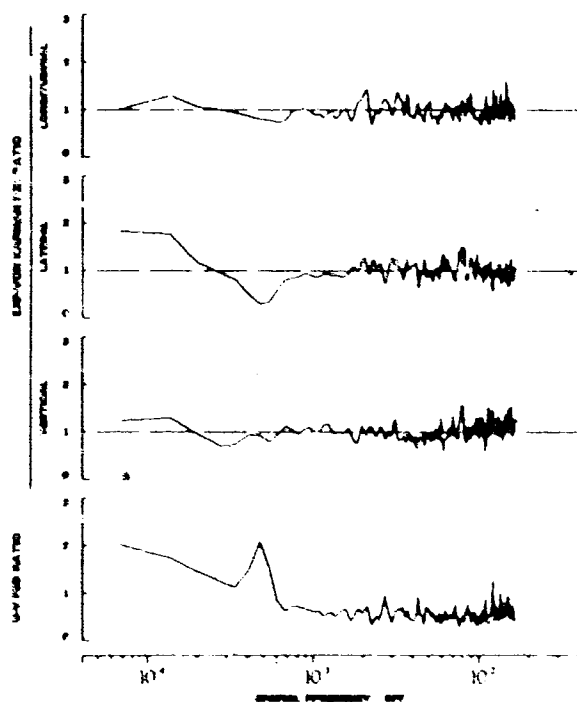
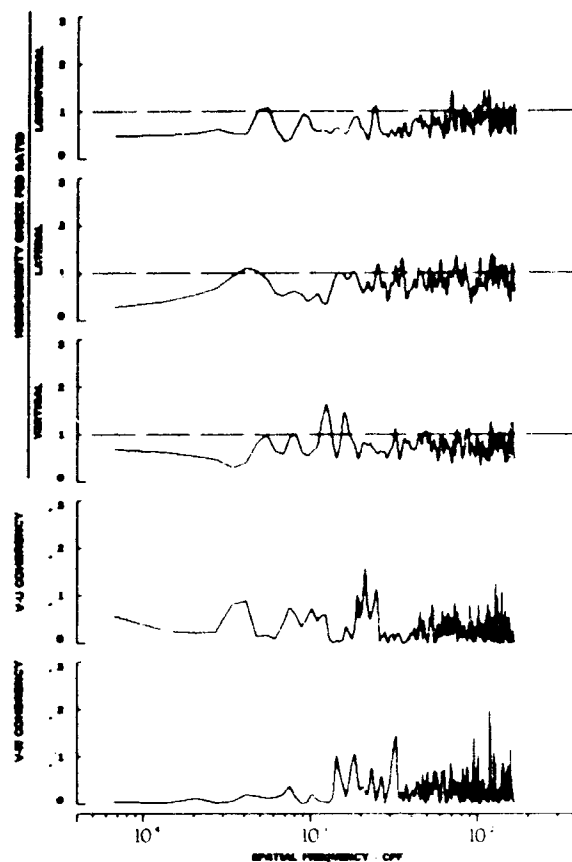
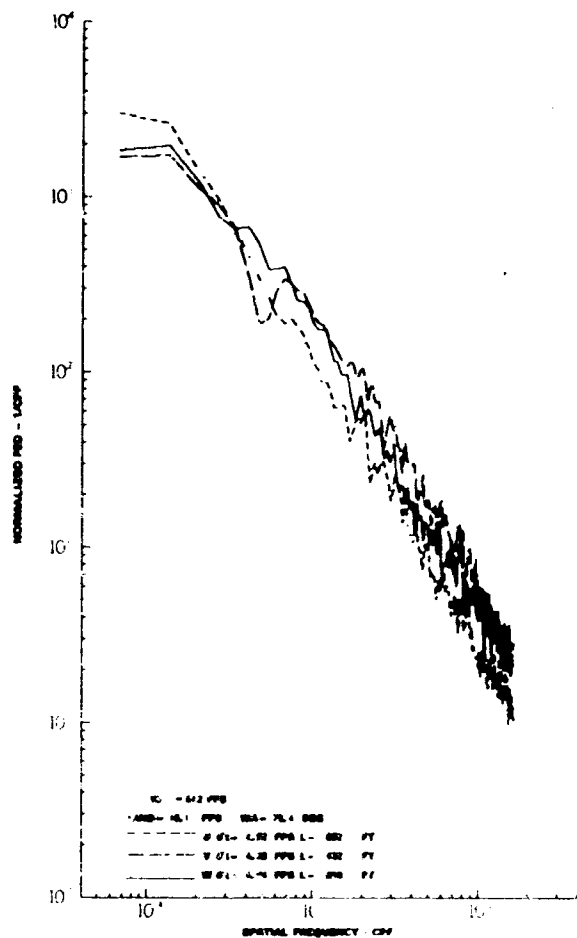


Turbulence Spectra Data For Test 259, Leg 1, Category 122313

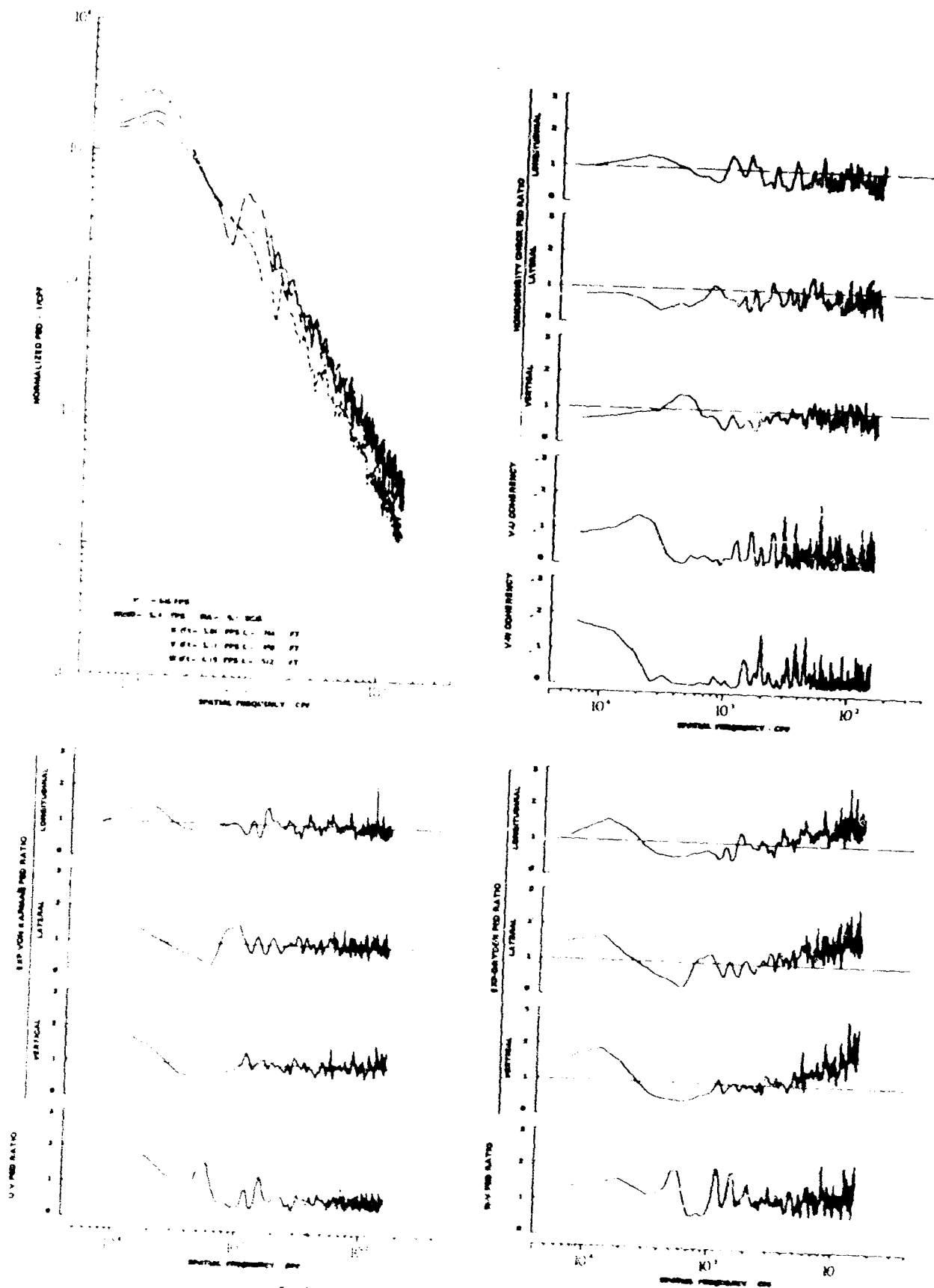




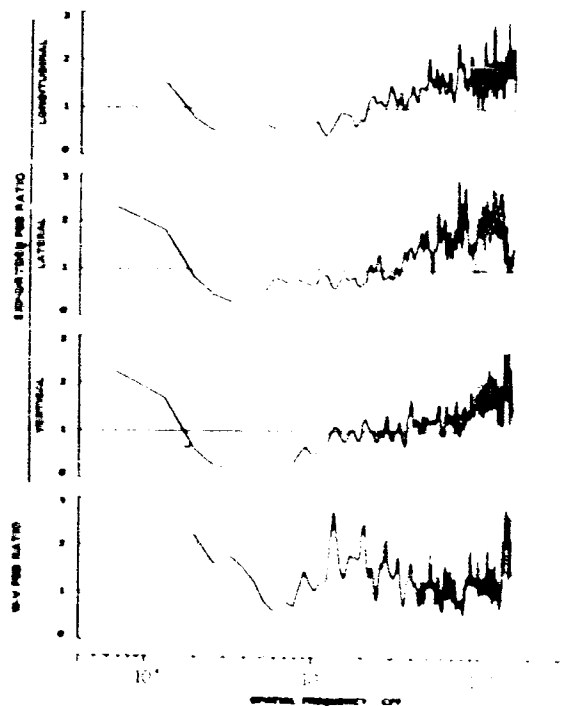
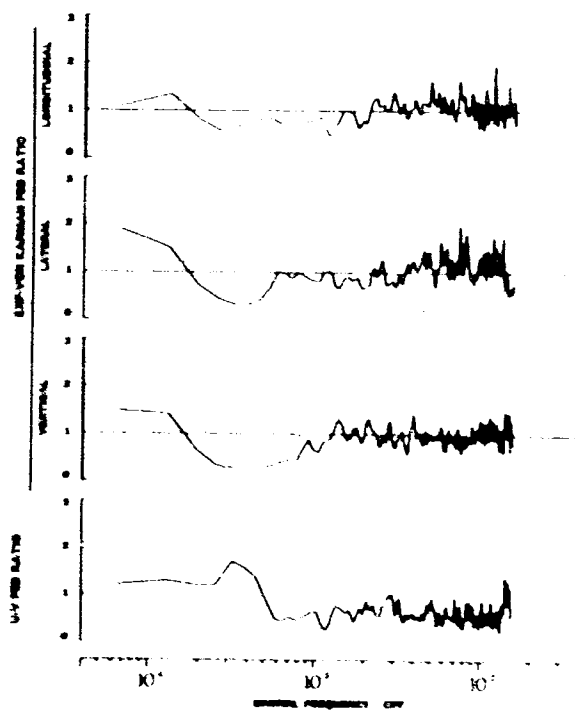
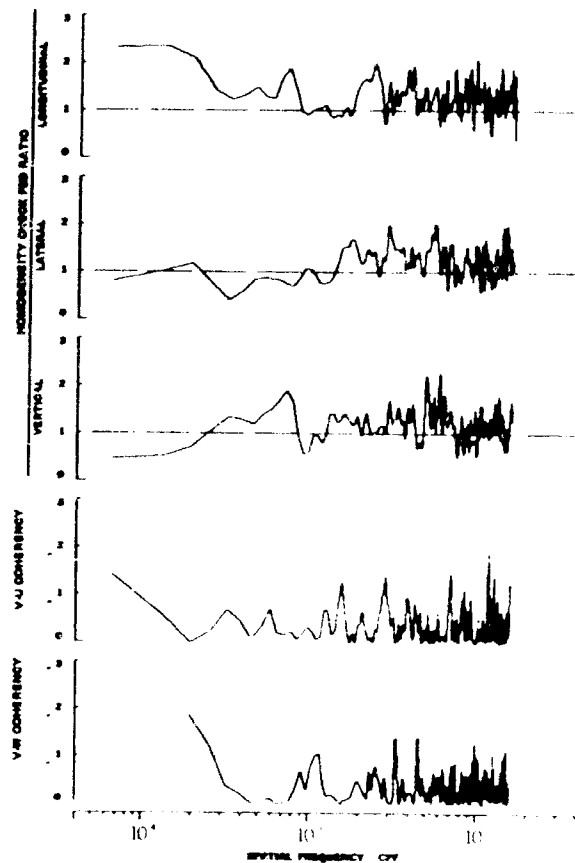
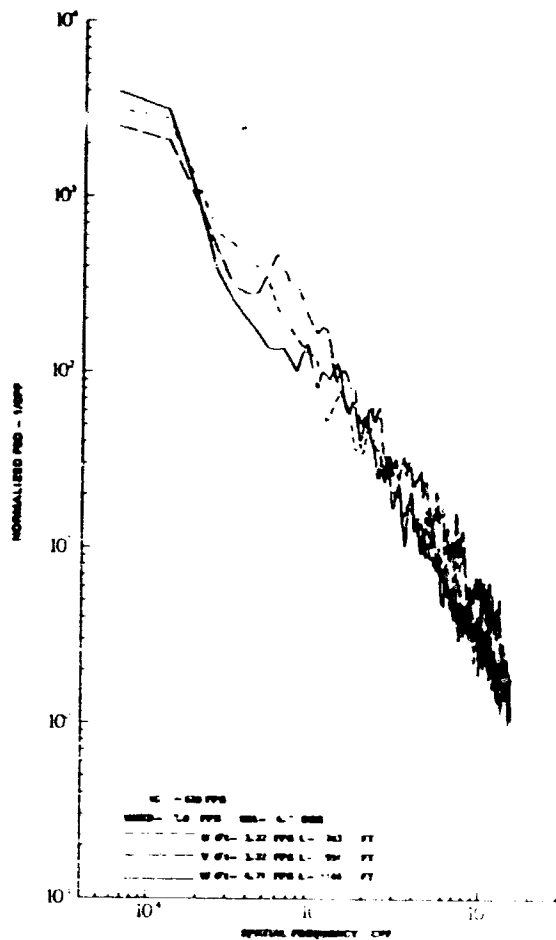
Turbulence Spectra Data For Test 259, Leg 3, Category 12431



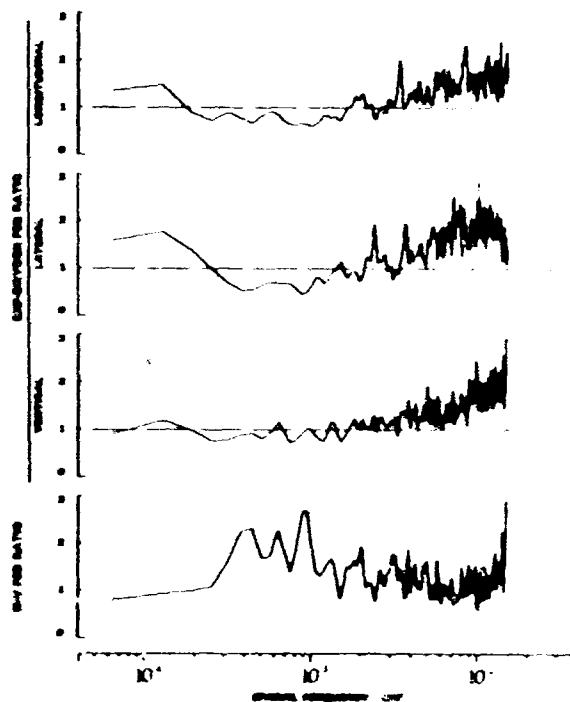
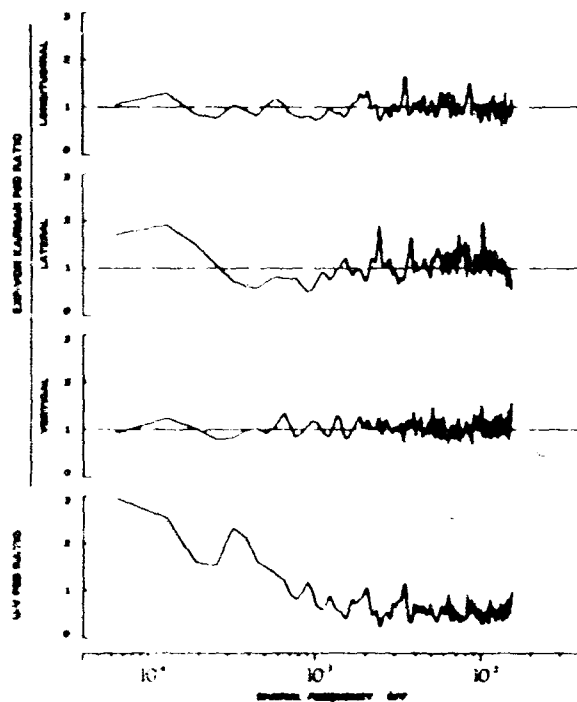
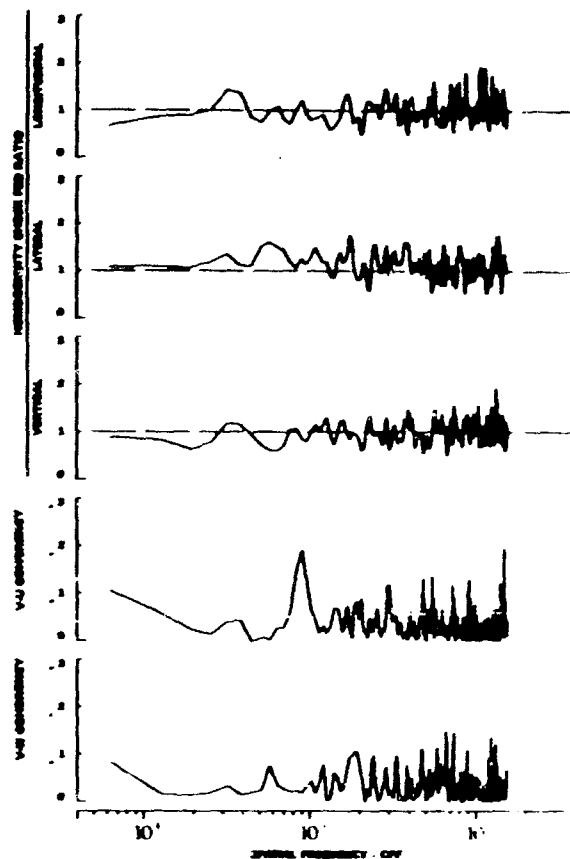
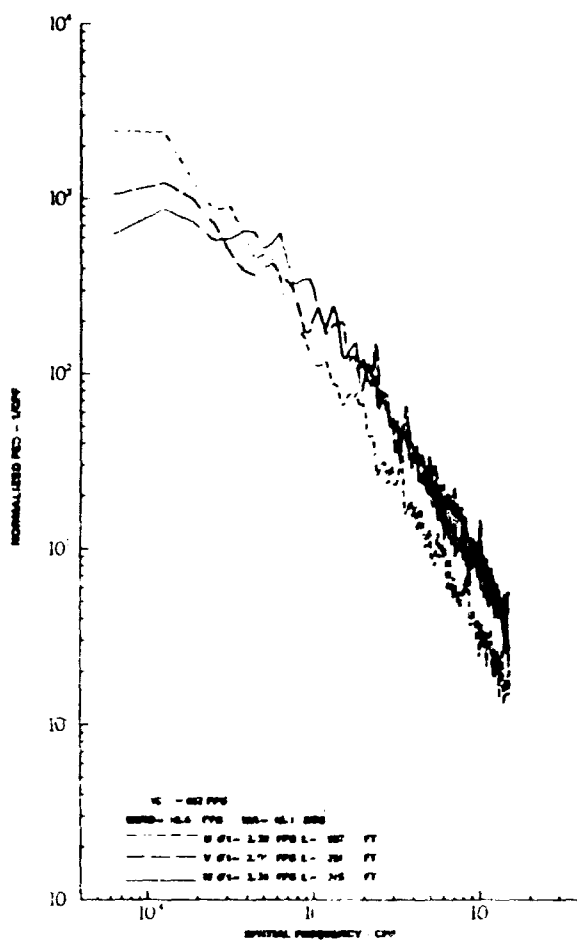
Turbulence Spectra Data For Test 259, Leg 5, Category 123313



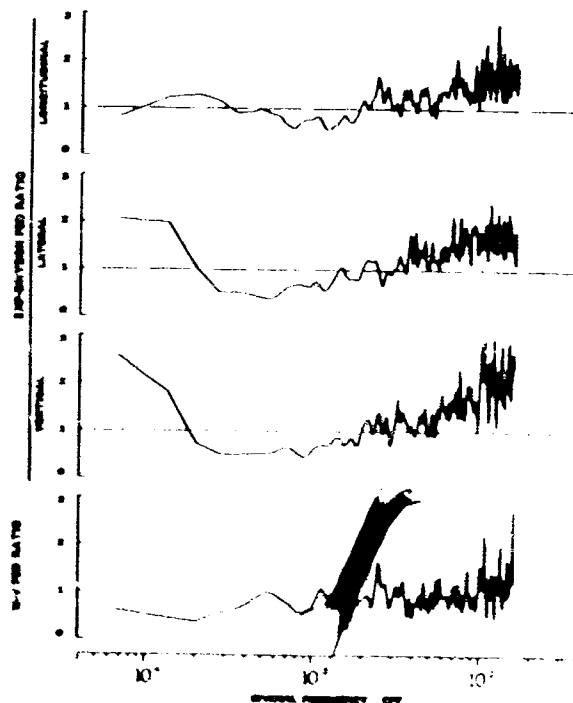
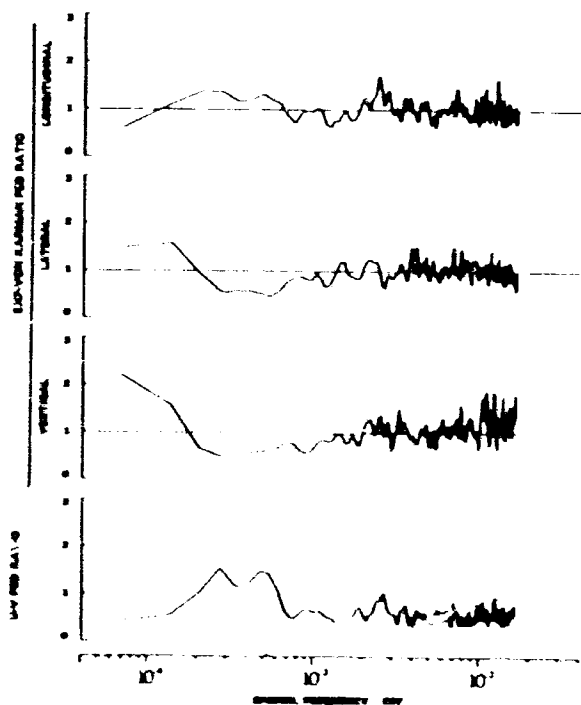
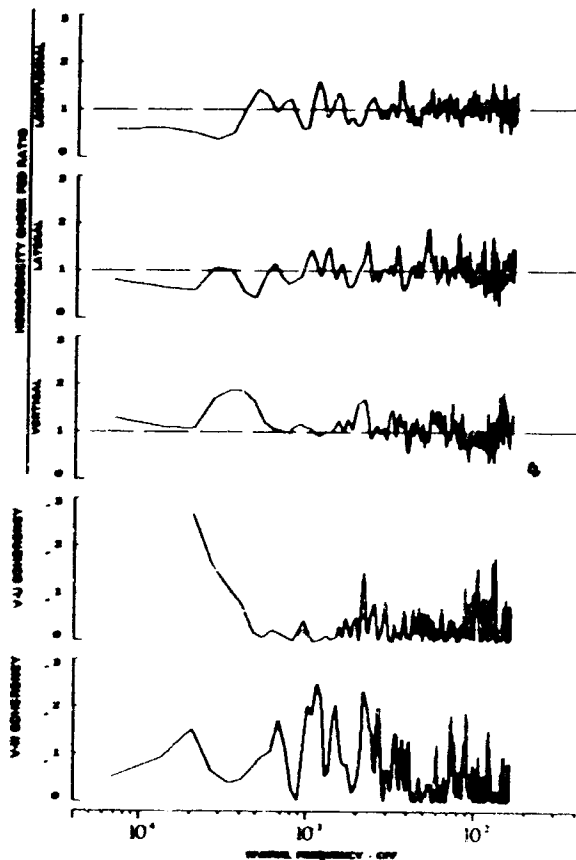
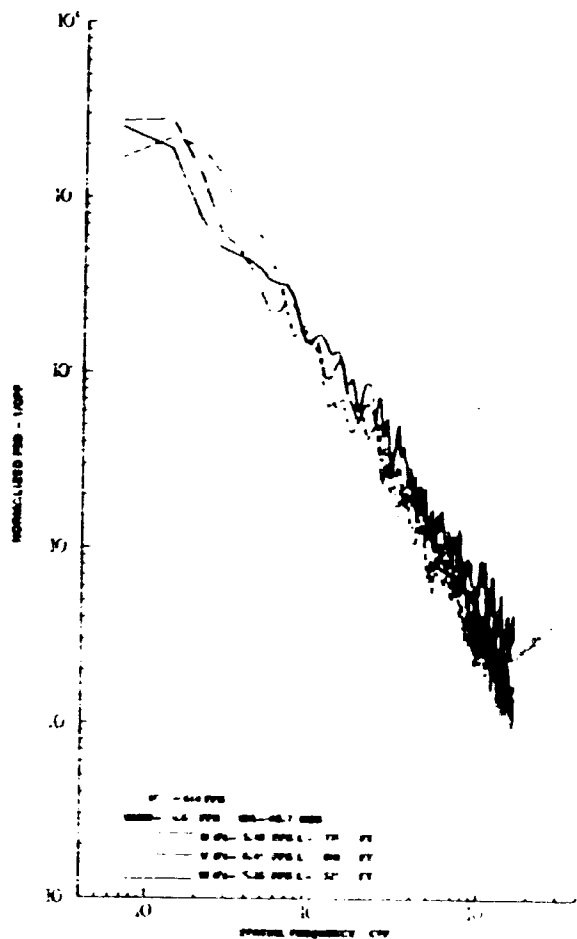
Turbulence Spectra Data For Test 259, Leg 7, Category 123313



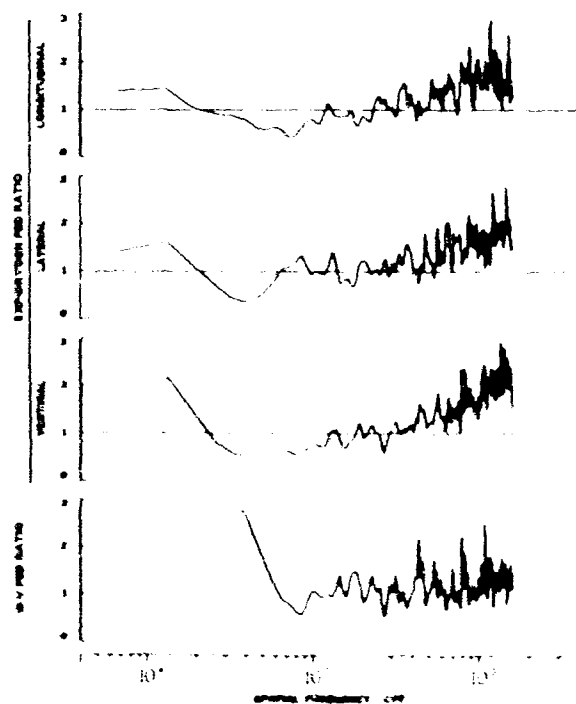
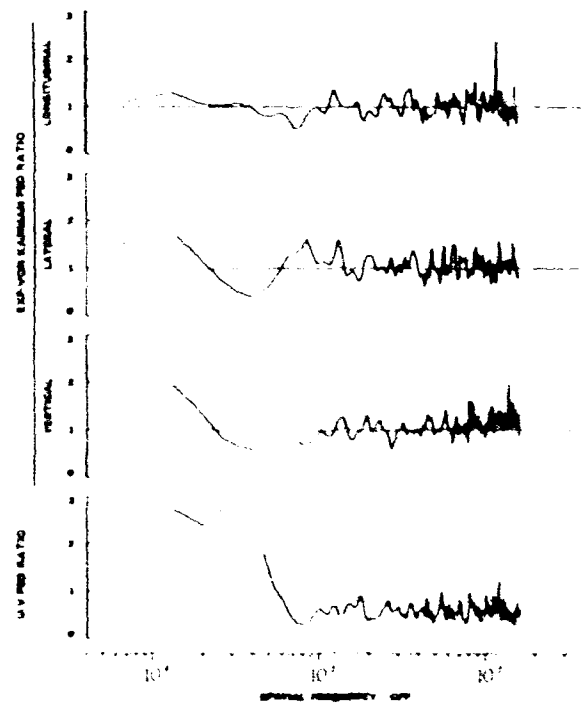
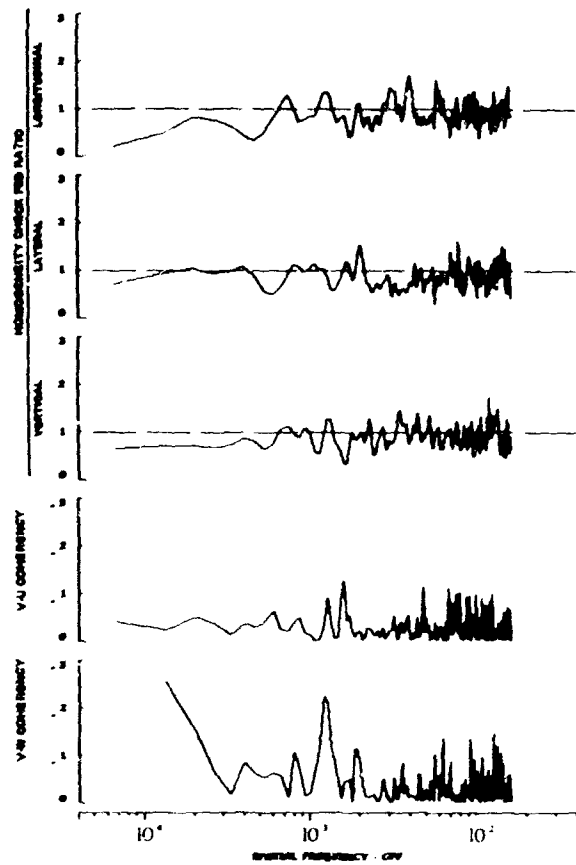
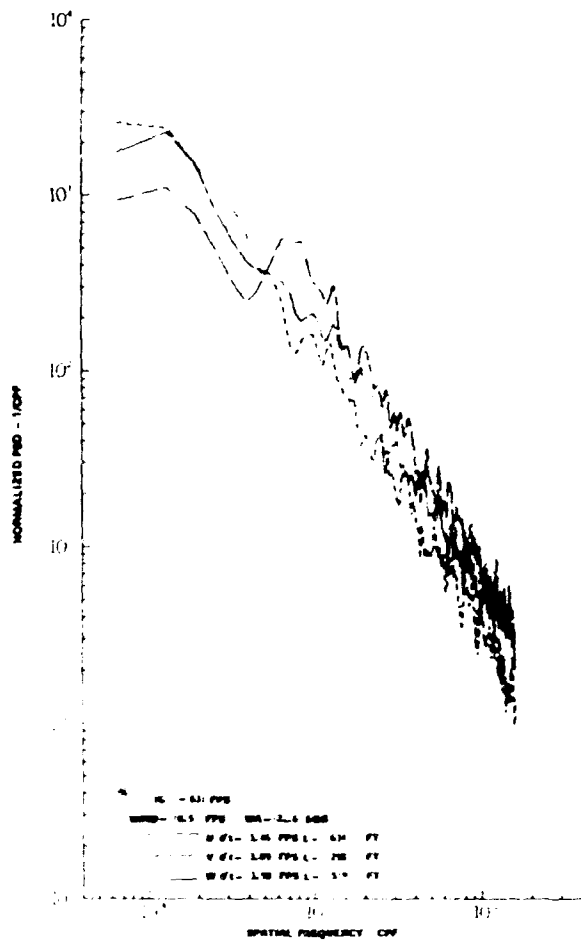
Turbulence Spectra Data For Test 261, Leg 1, Category 112213



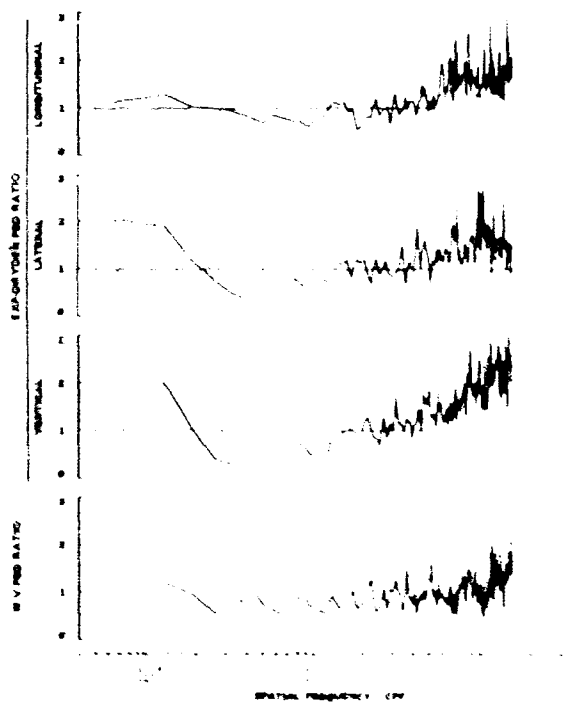
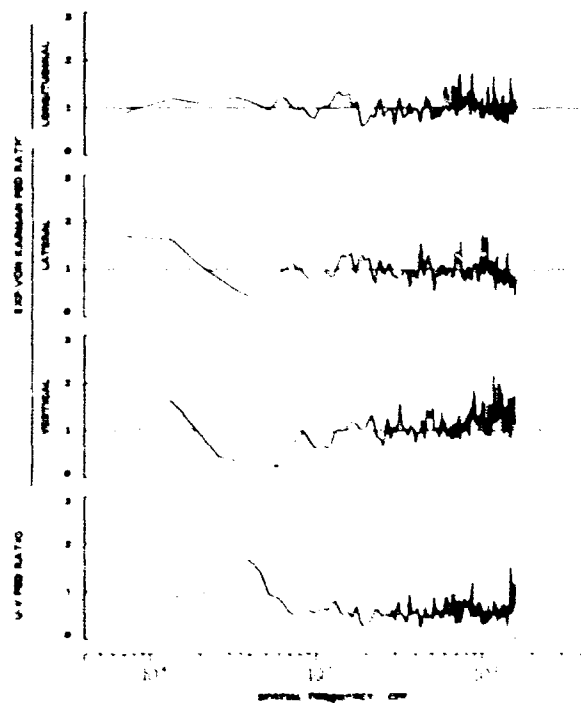
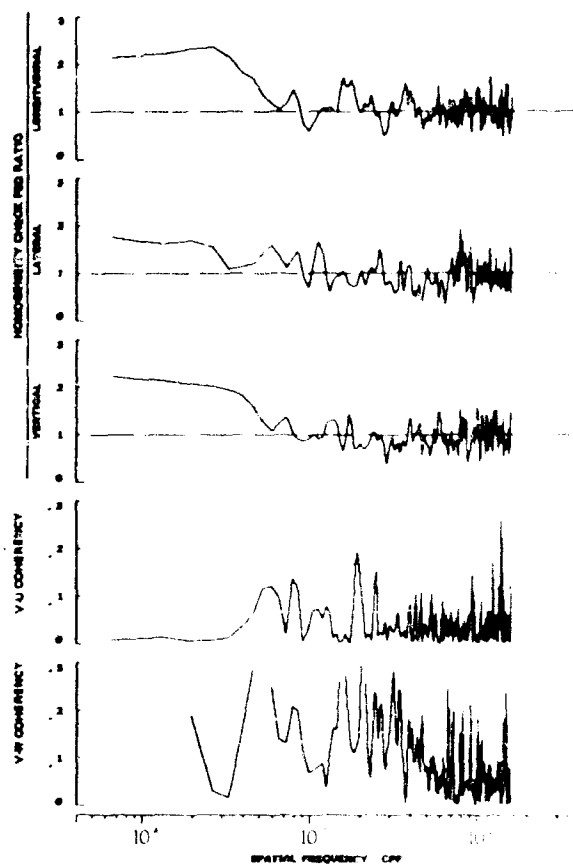
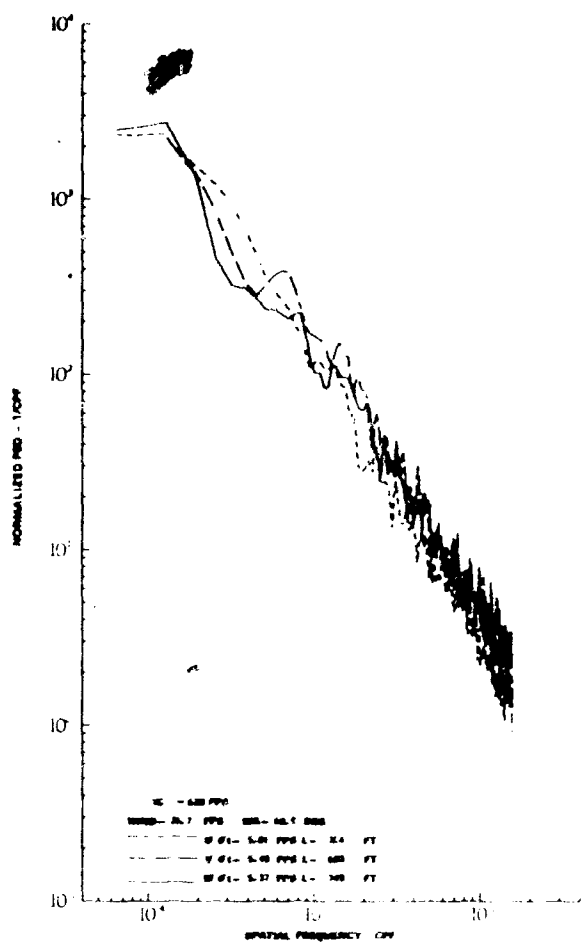
Turbulence Spectra Data For Test 261, Log 3 Category 112213



Turbulence Spectra Data For Test 261, Leg 5, Category 112213

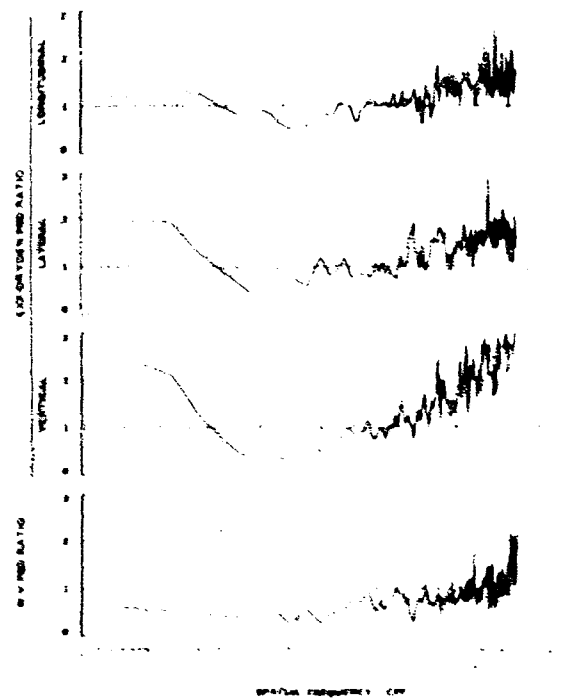
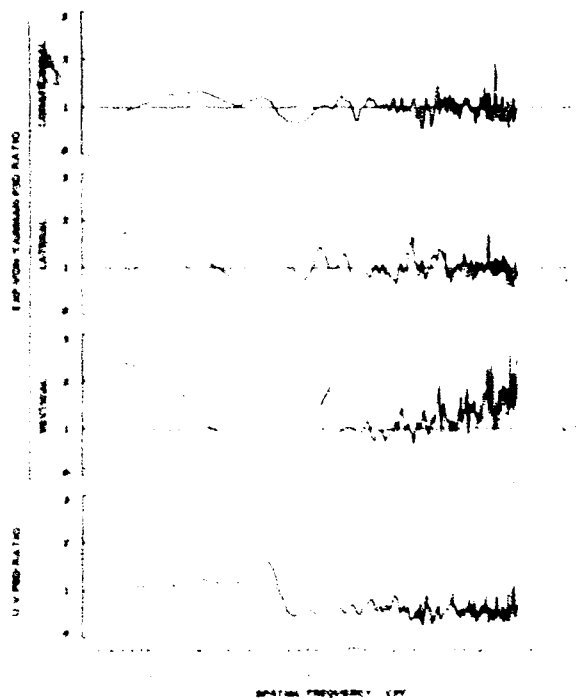
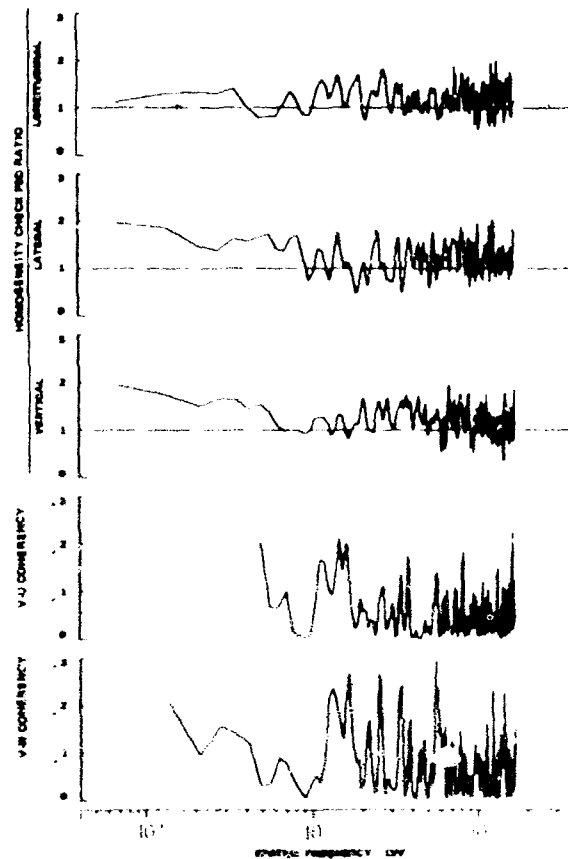
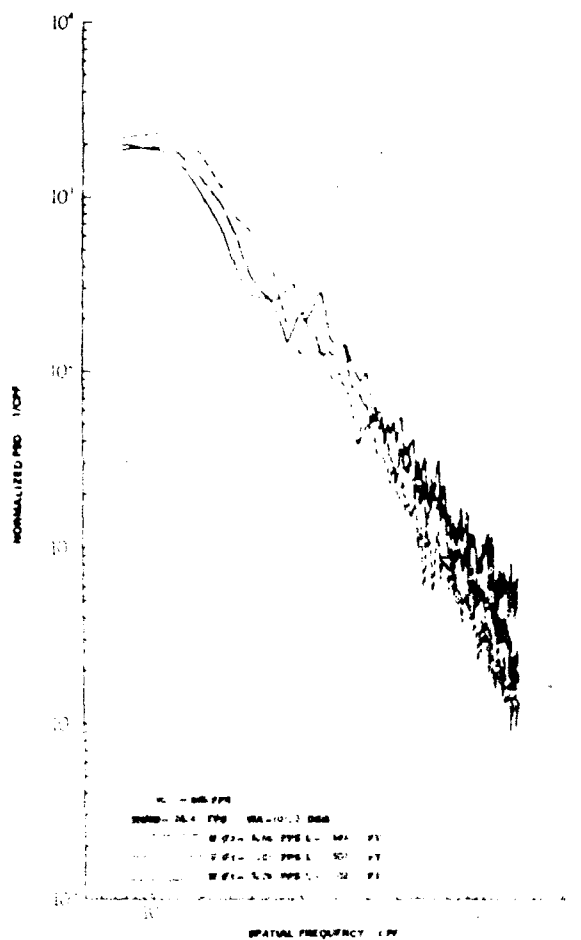


Turbulence Spectra Data For Test 261, Leg 7, Category 111213

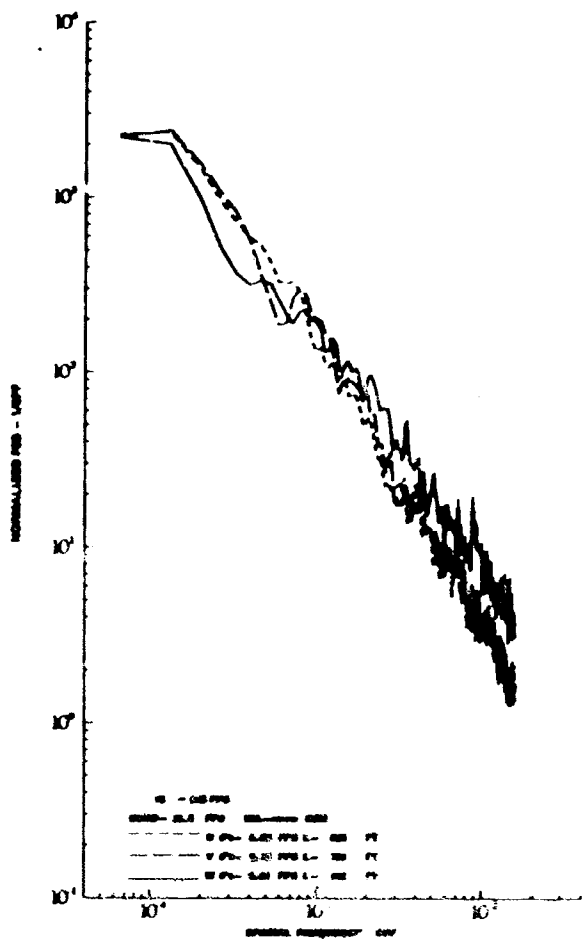


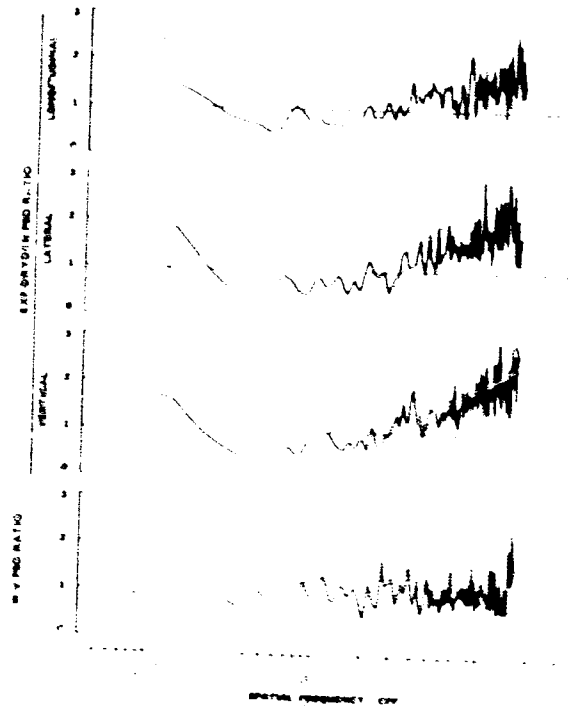
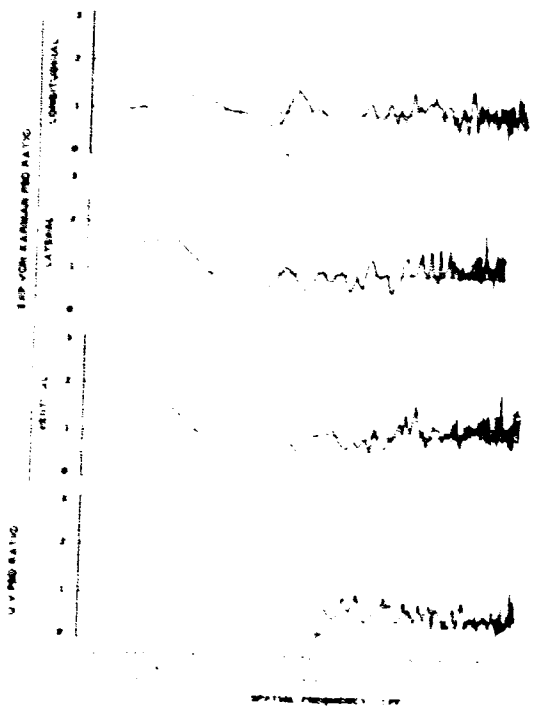
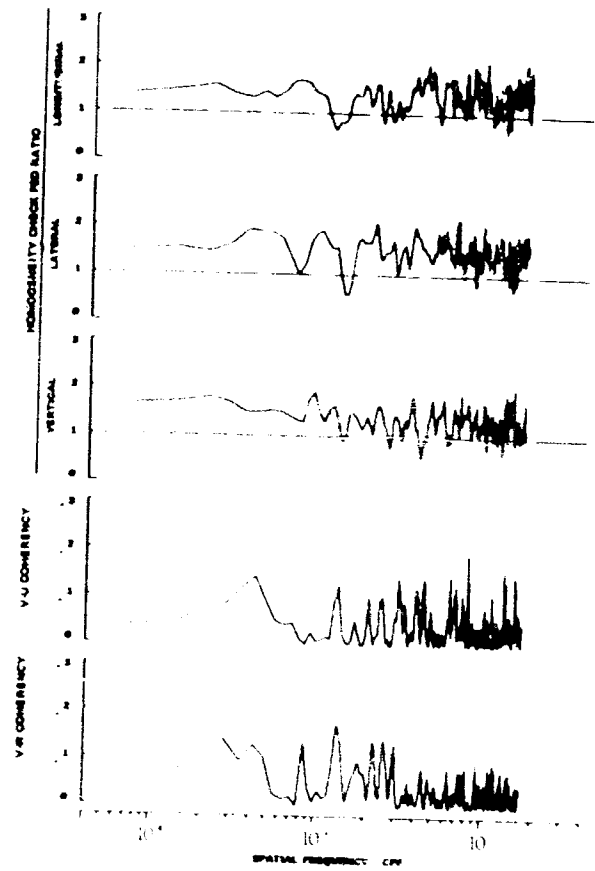
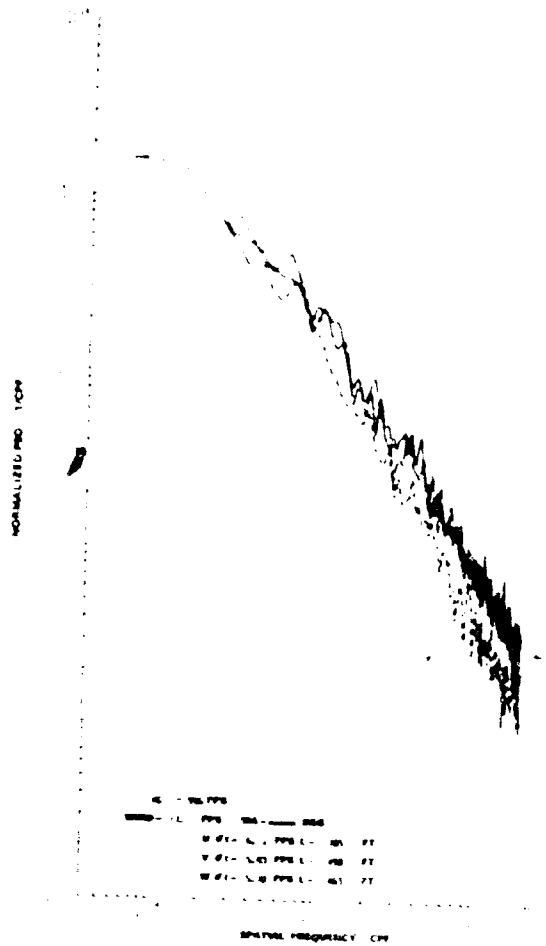
Turbulence Spectra Data For Test 262, Leg 2, Category 112313



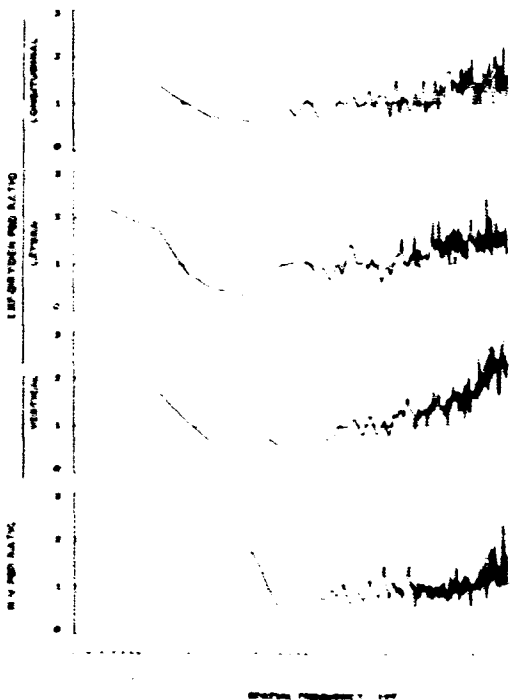
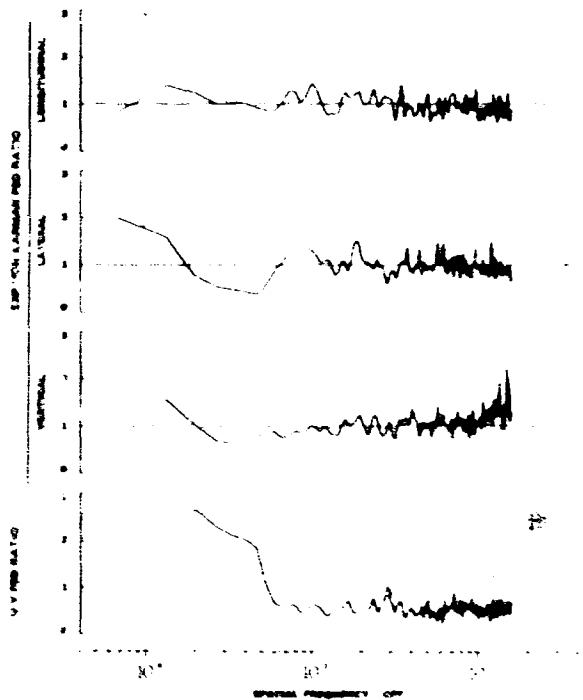
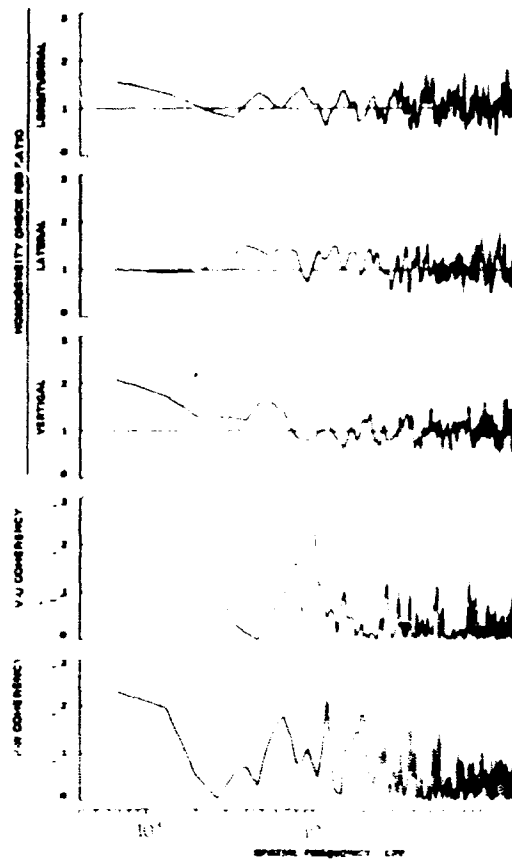
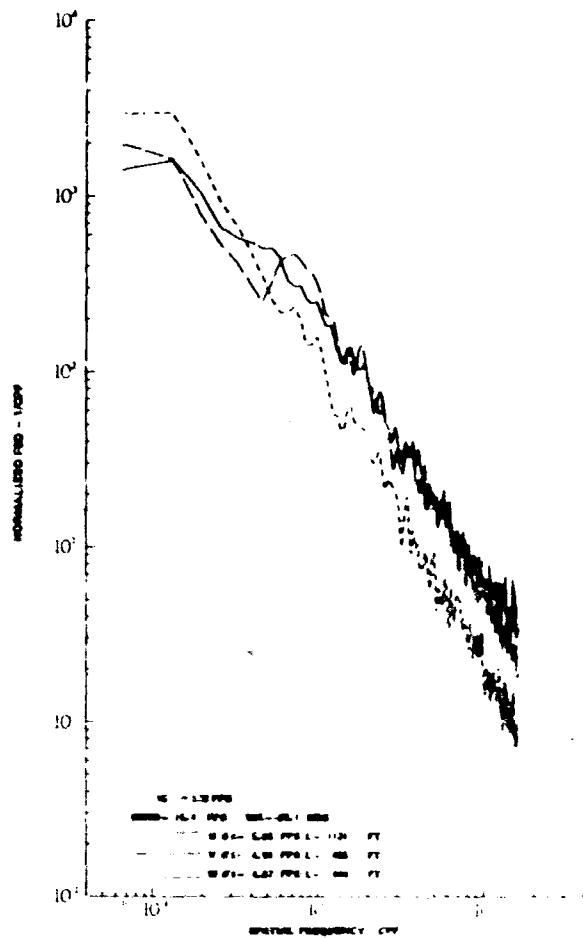


Turbulence Spectra Data For Test 262, Leg 4, Category 222313

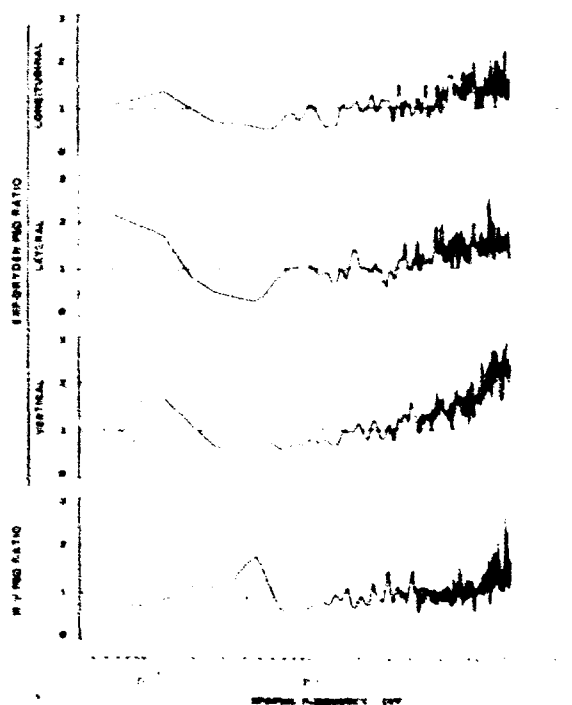
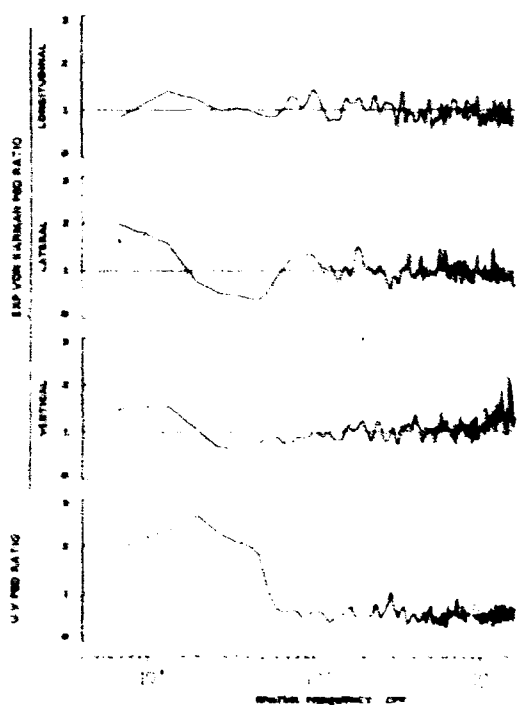
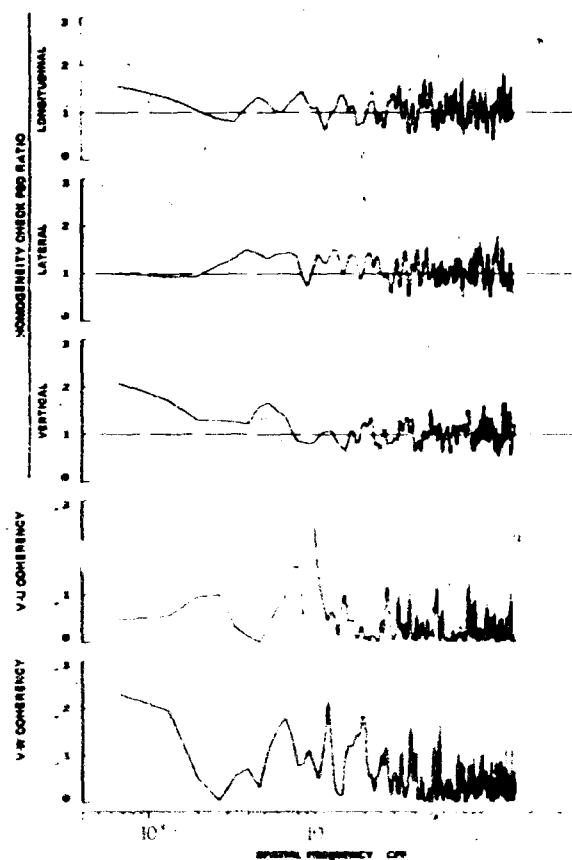


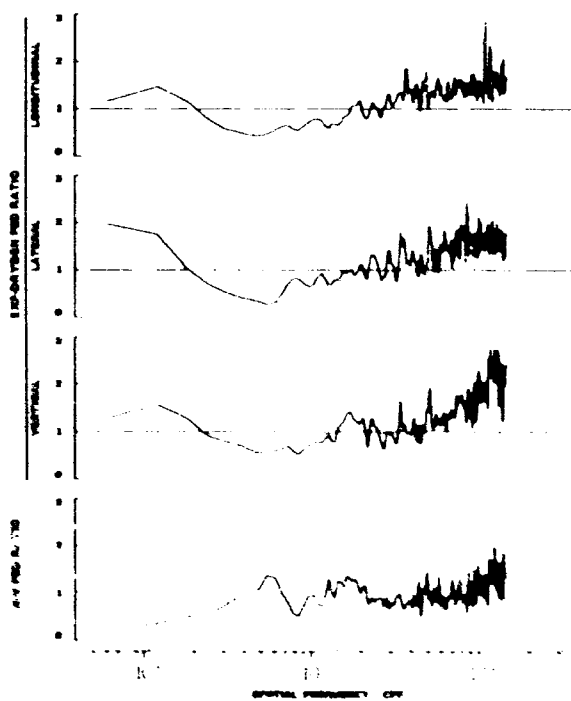
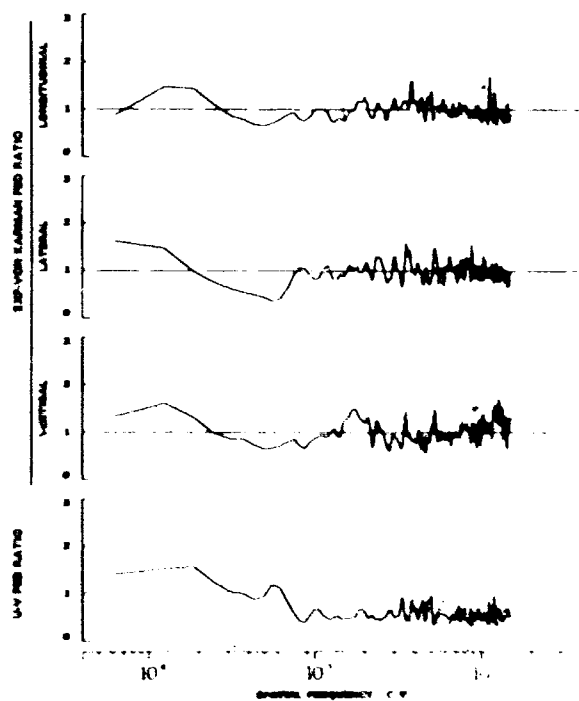
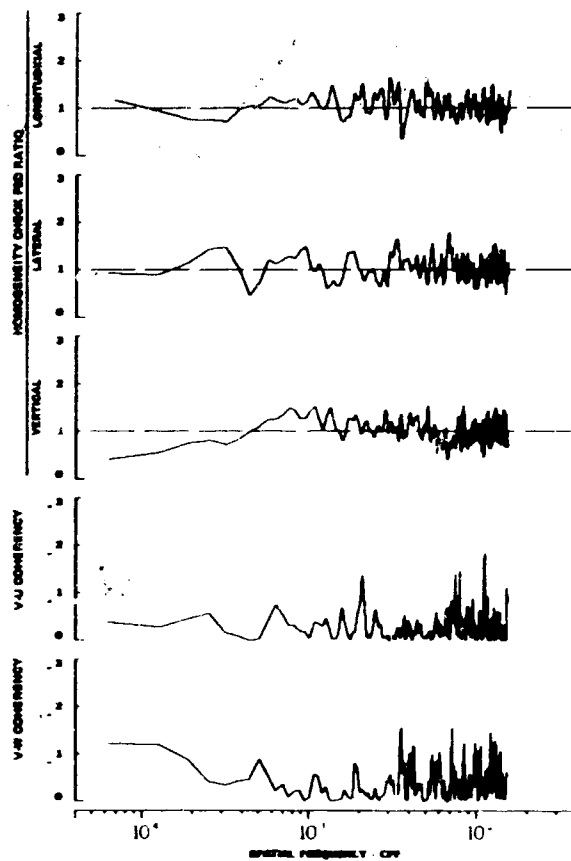
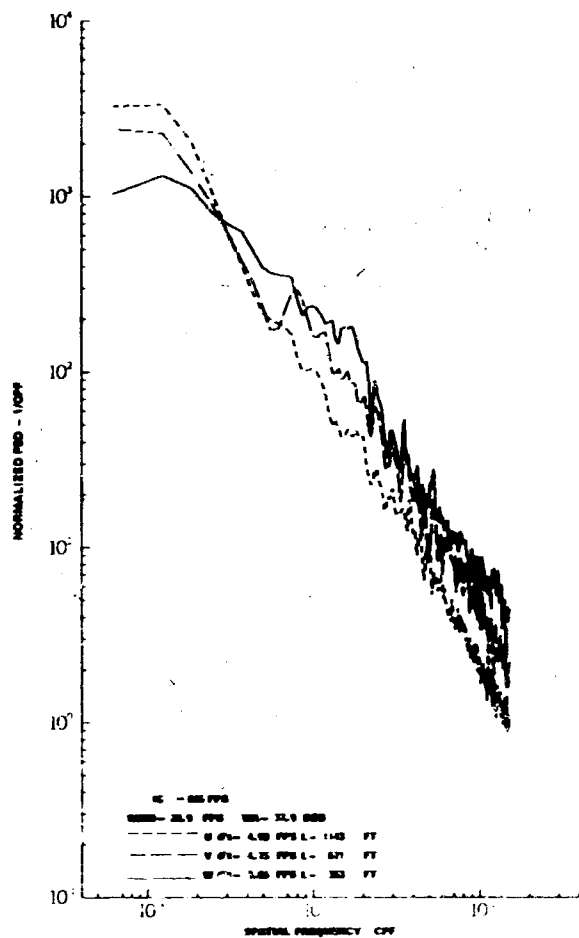


Turbulence Spectra Data for Test 204, Leg 2, Category 112213



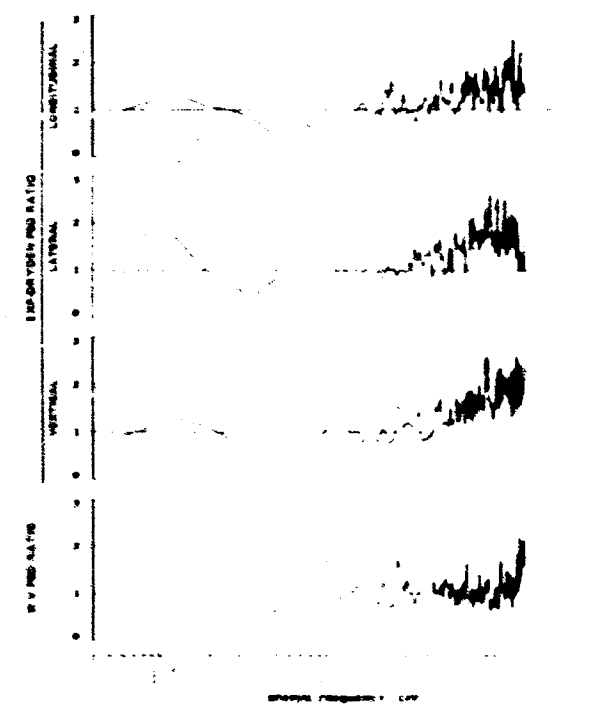
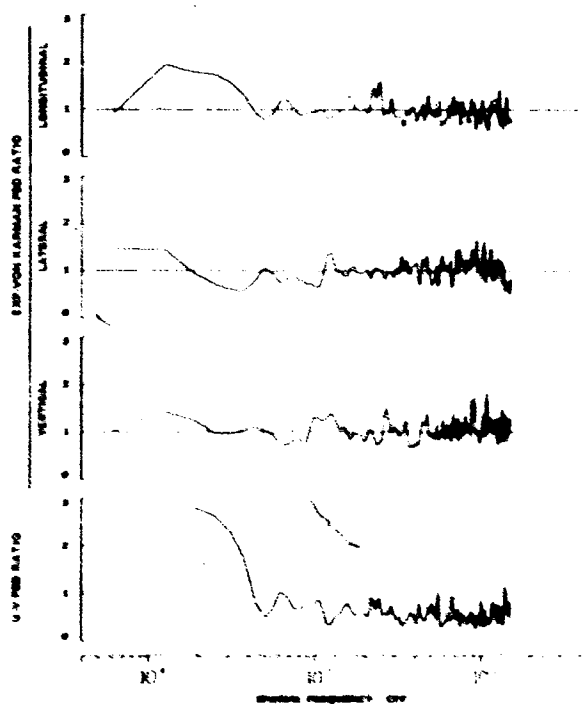
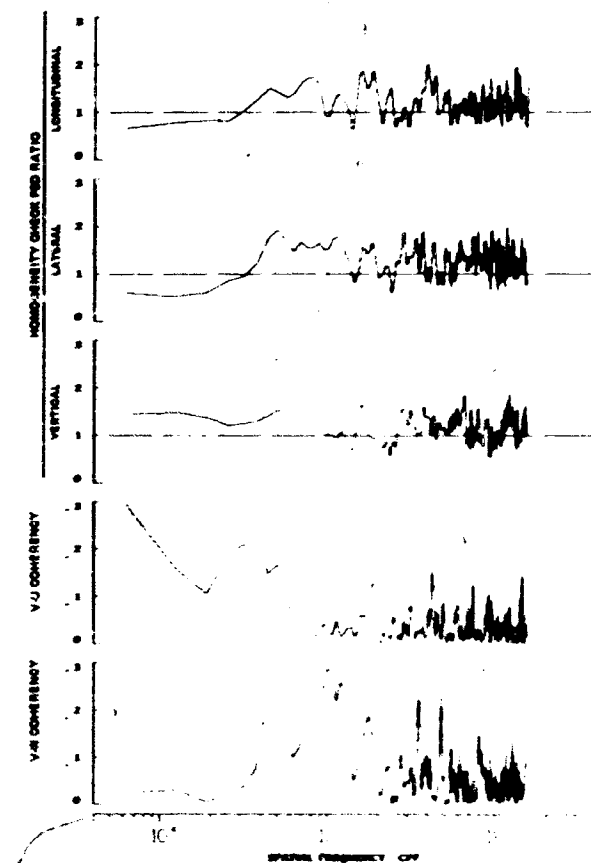
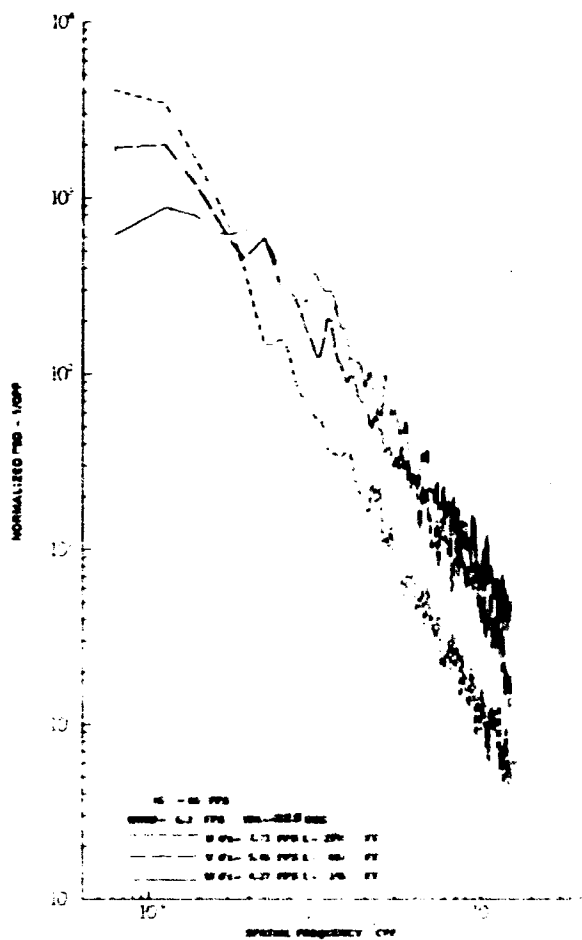
Turbulence Spectra Data For Test 204 Leg 4, Category 114211





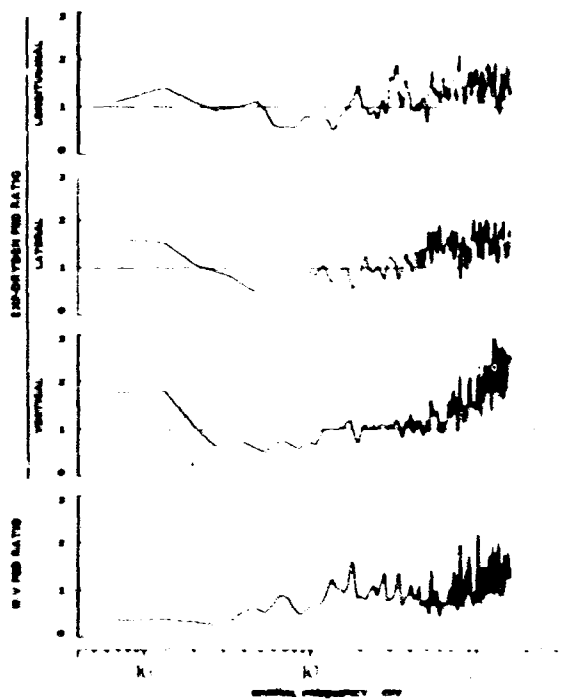
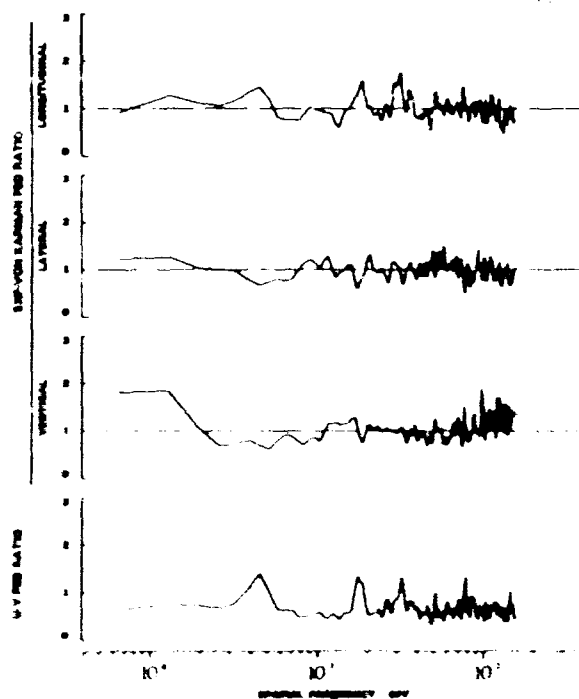
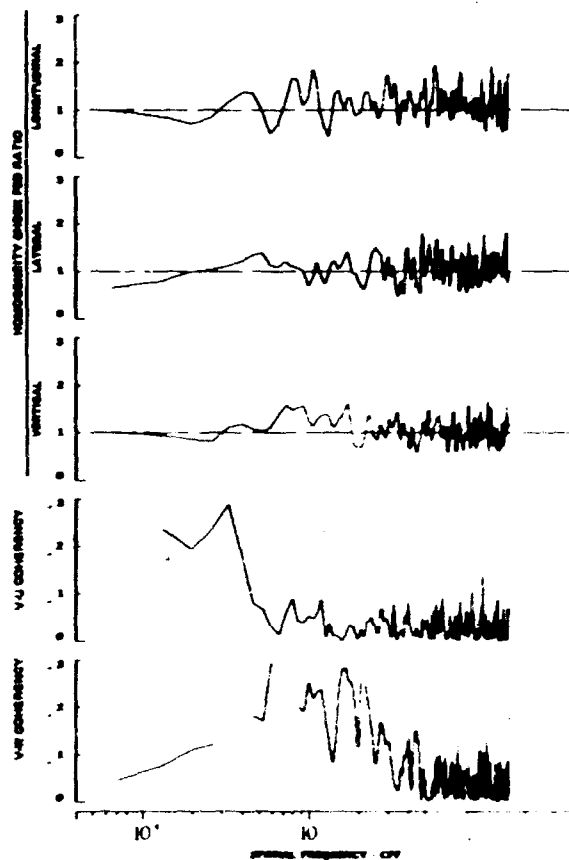
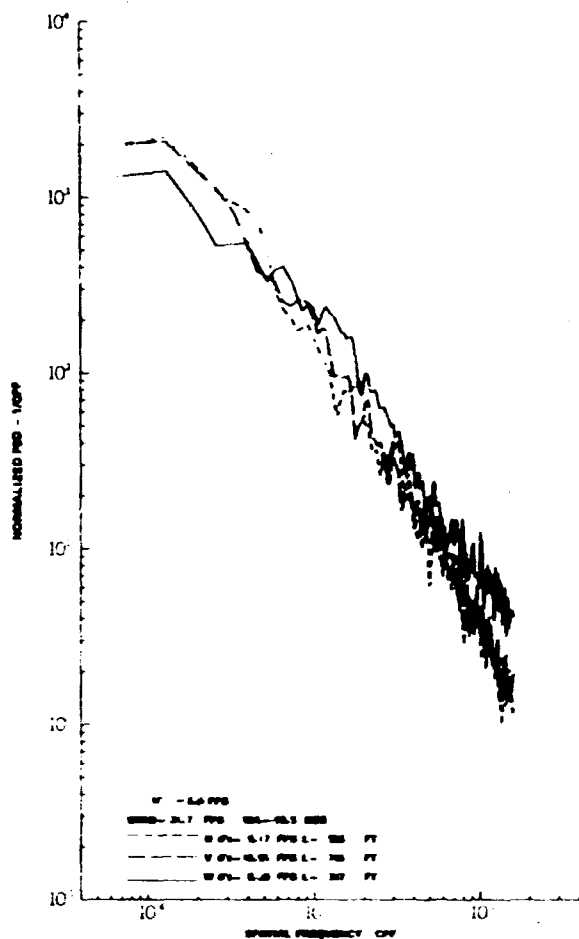
Turbulence Spectra Data for Test 264, Leg 8, Category 414213



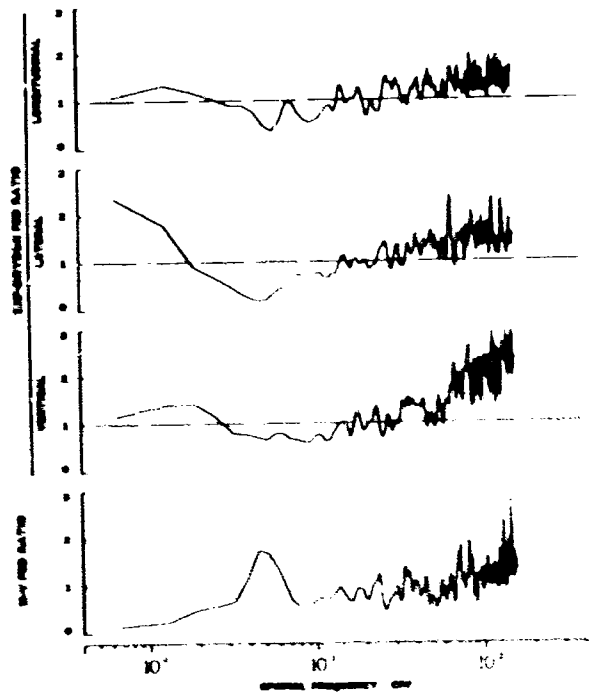
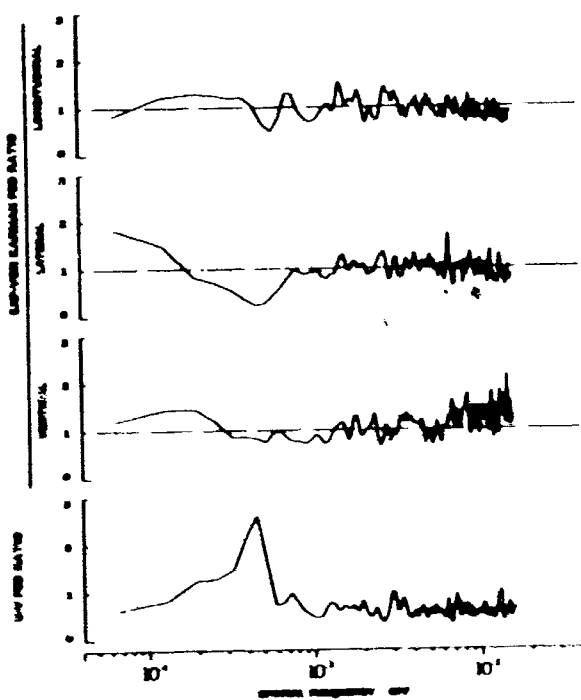
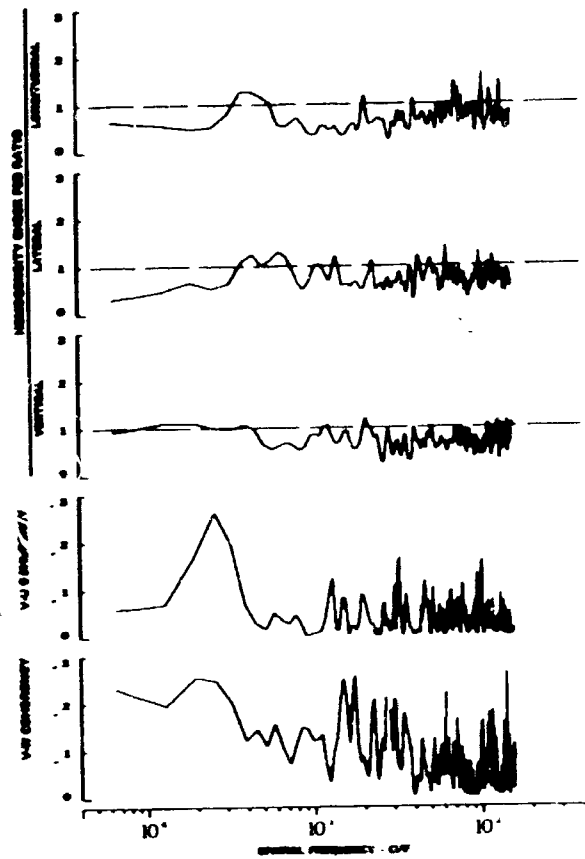


Turbulence Spectra Data for Test 205, Leg 3, Category 111111

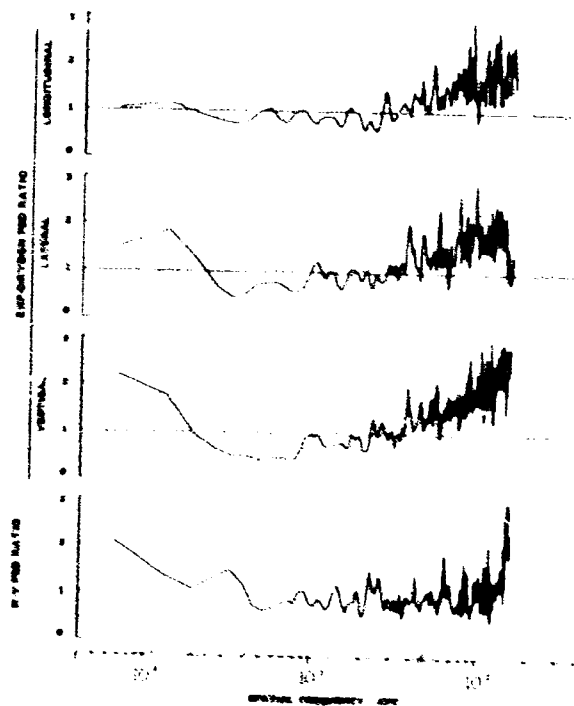
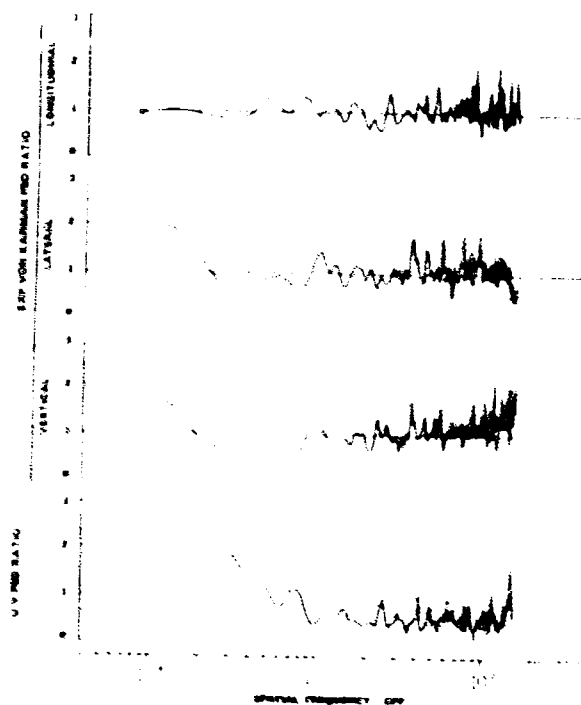
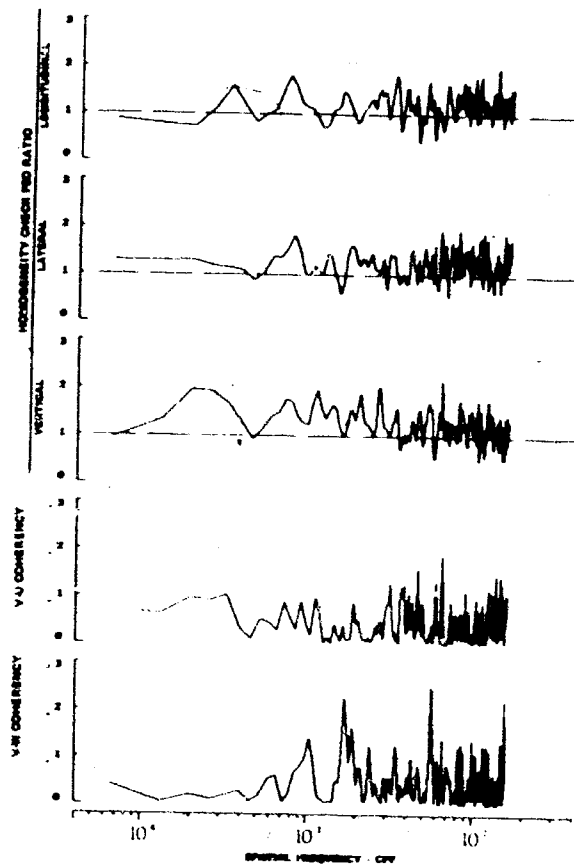
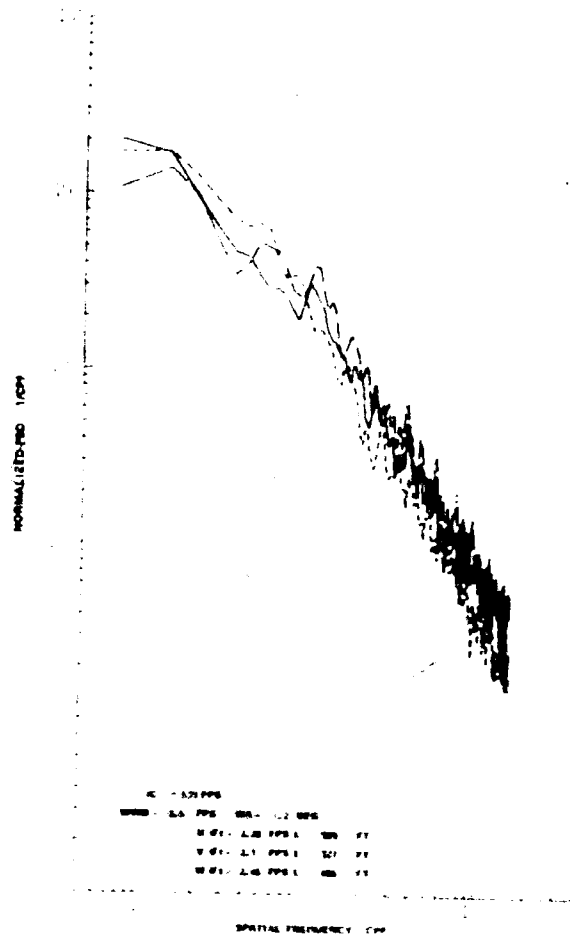




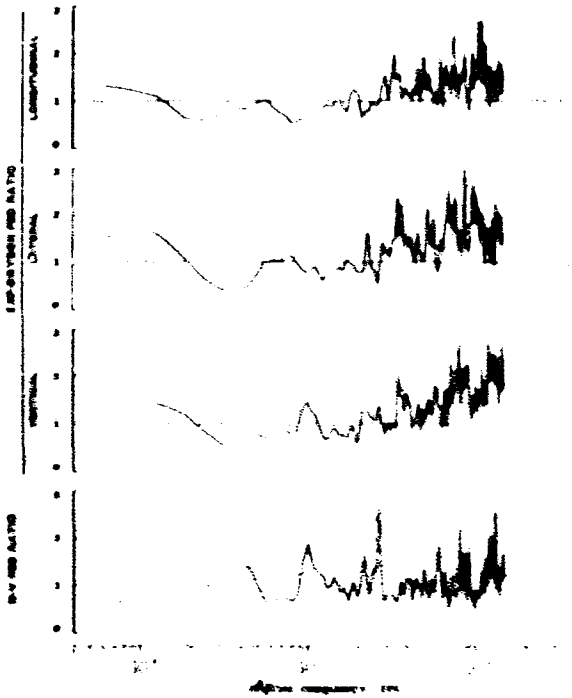
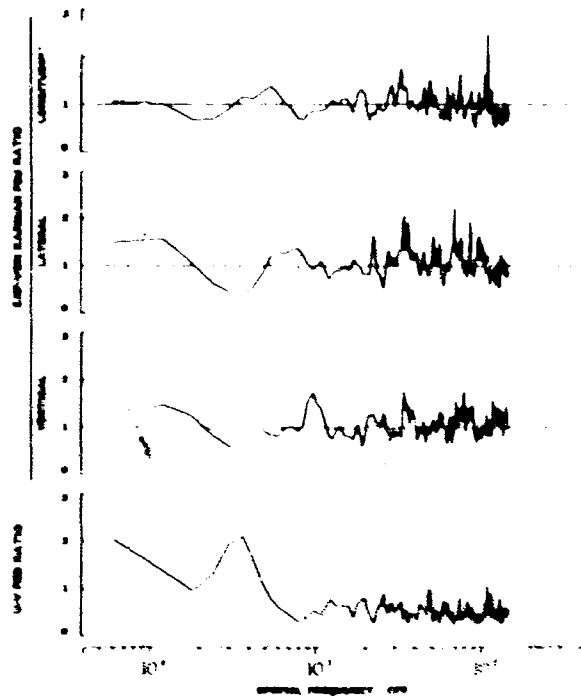
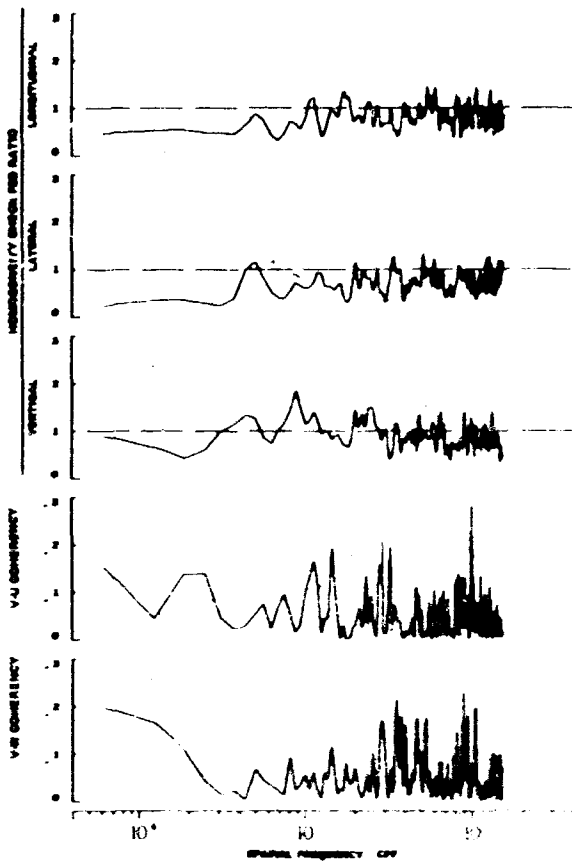
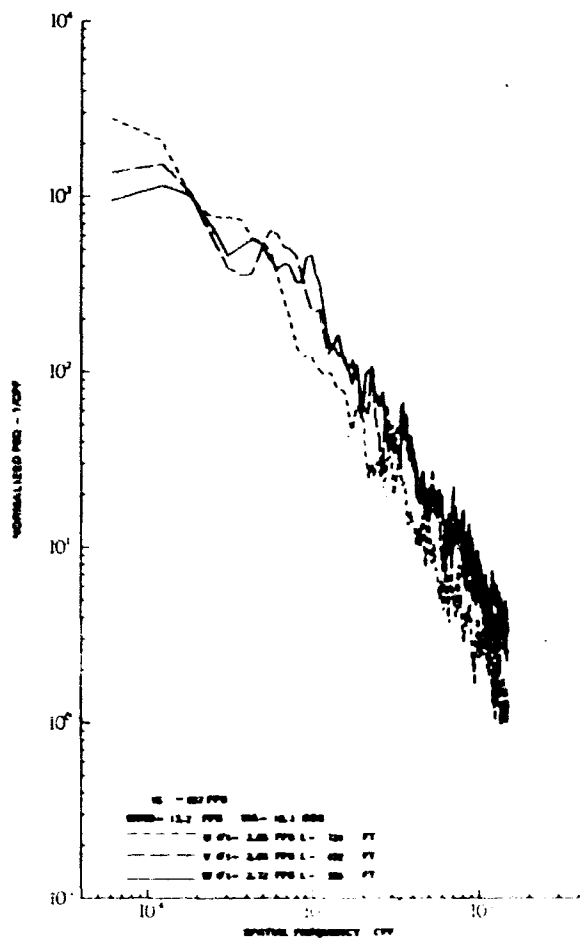
Turbulence Spectra Data For Test 265, Leg 5, Category 114313



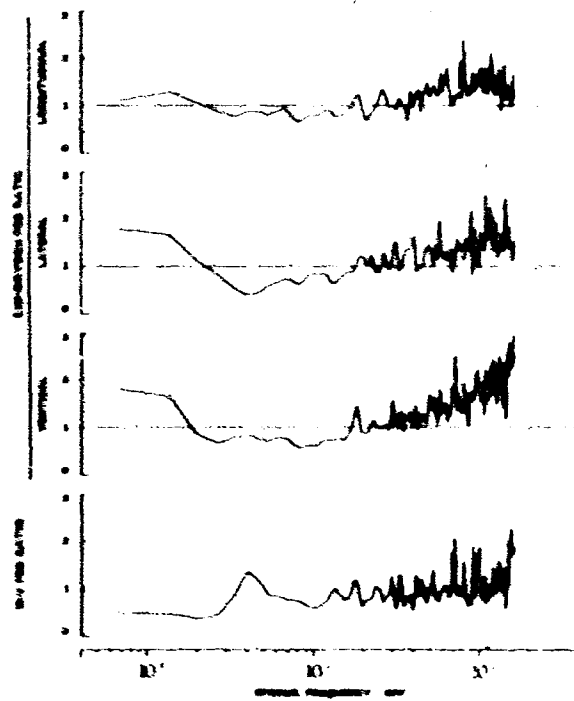
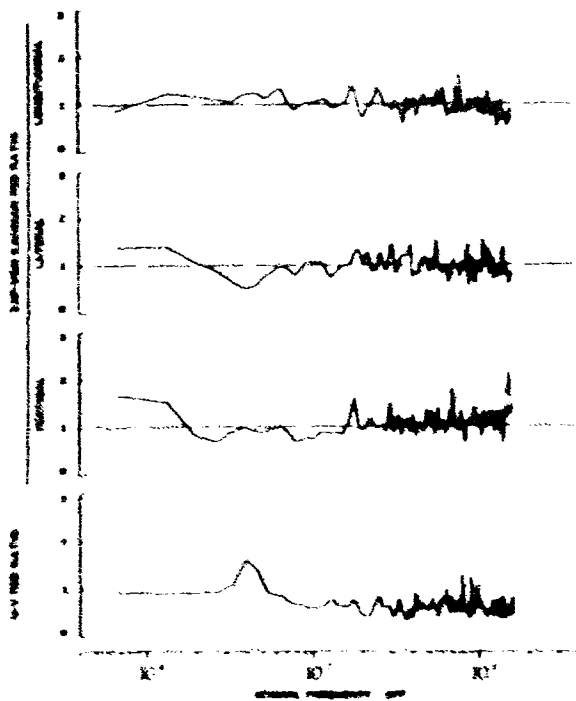
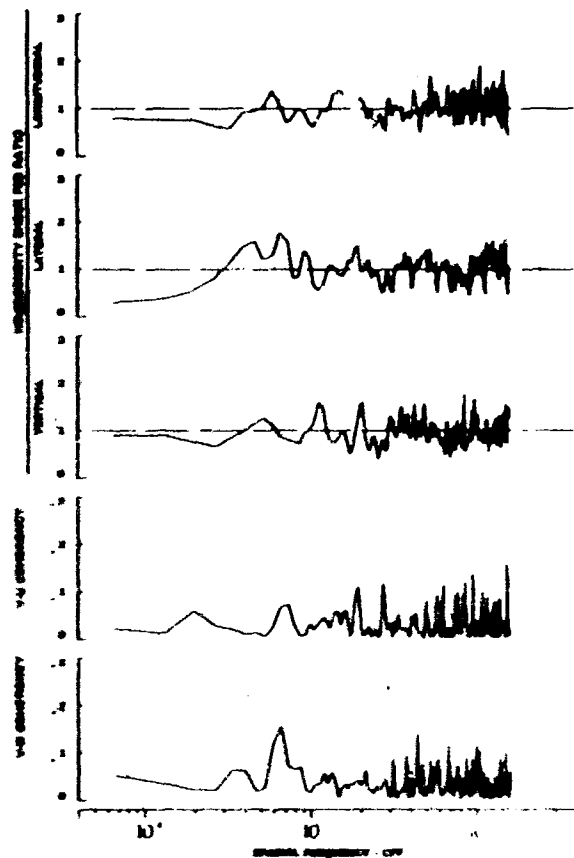
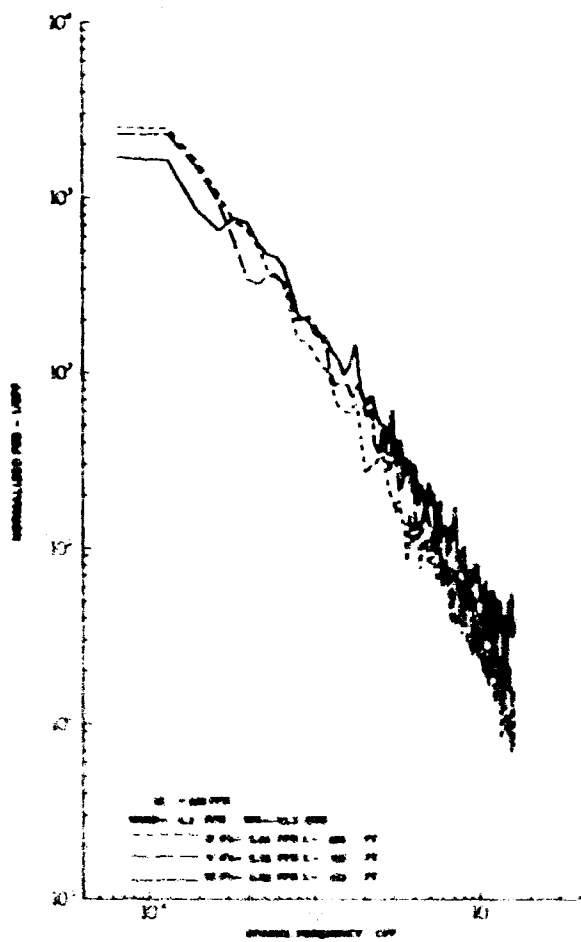
401



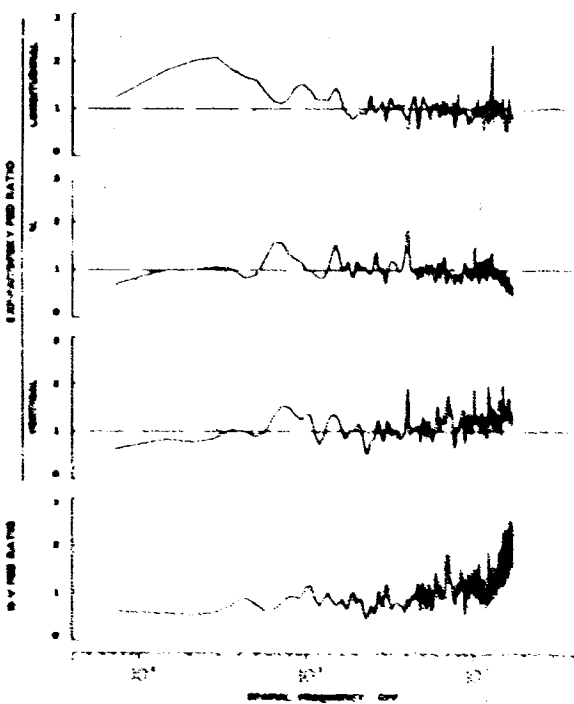
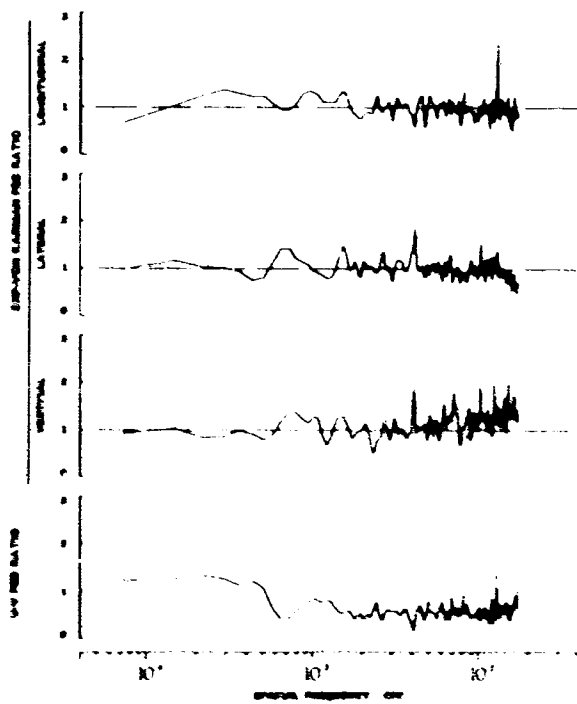
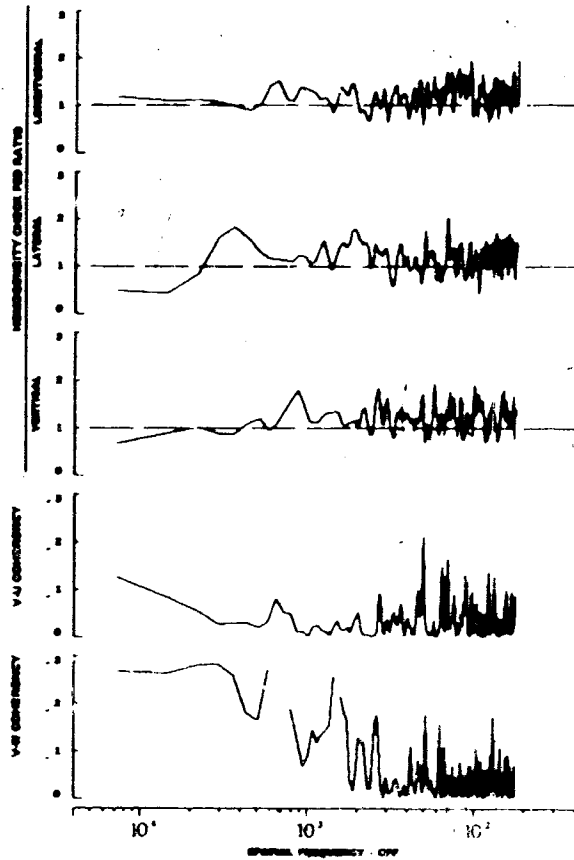
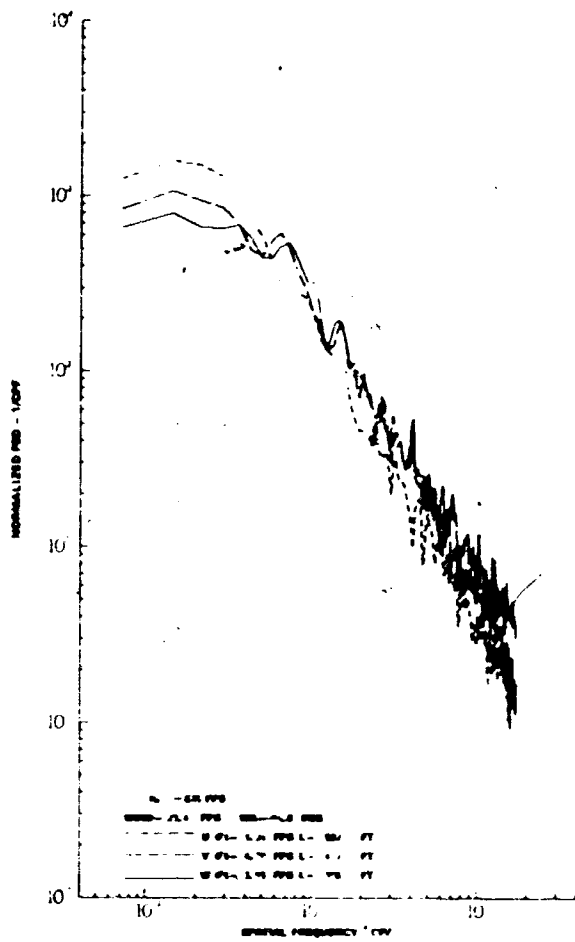
Turbulence Spectra Data For Test 207, Leg 1, Category 121213



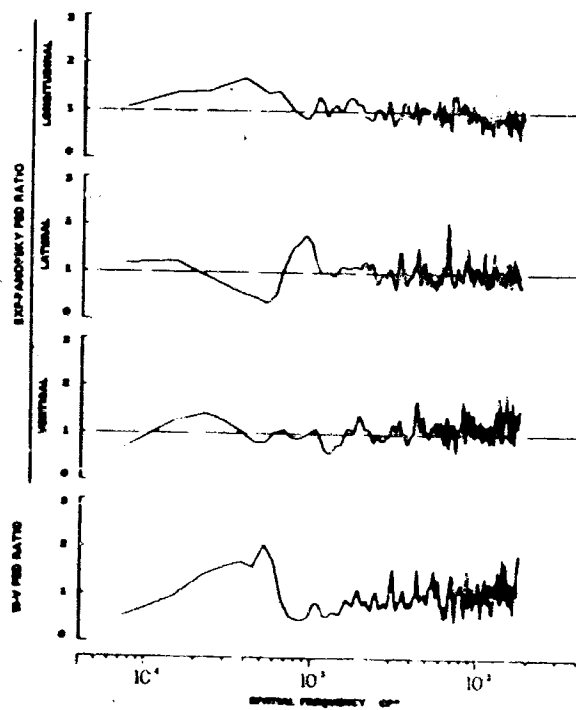
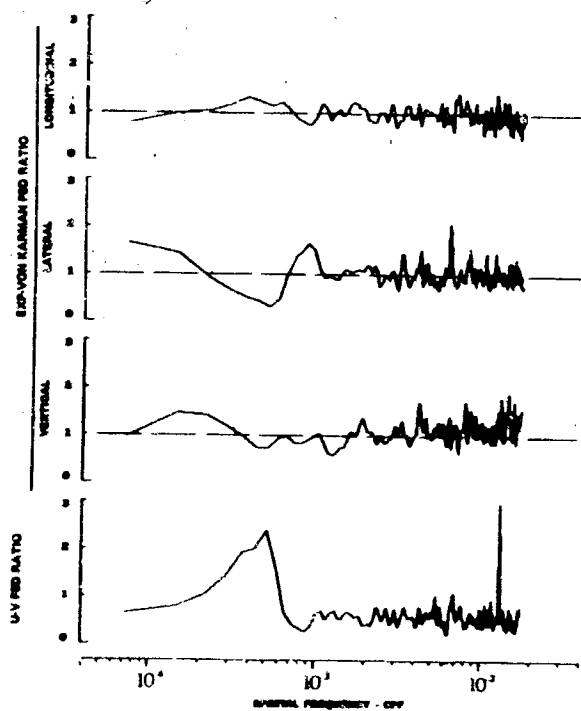
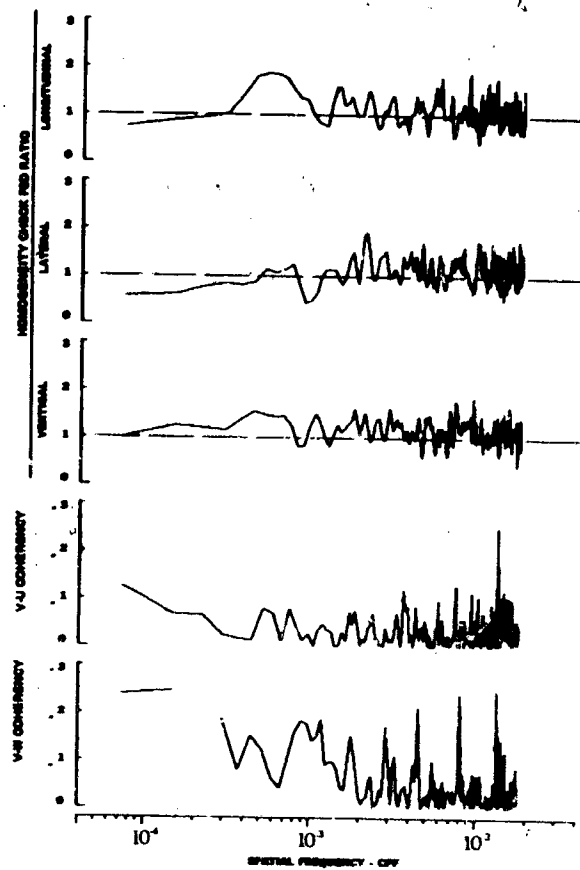
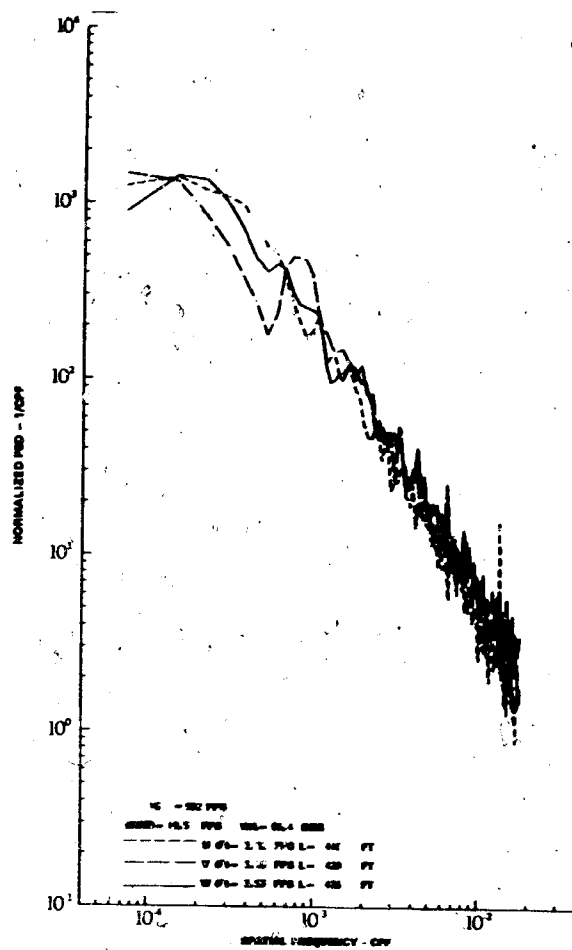
Turbulence Spectra Data For Test 267, Leg 3, Category 121213



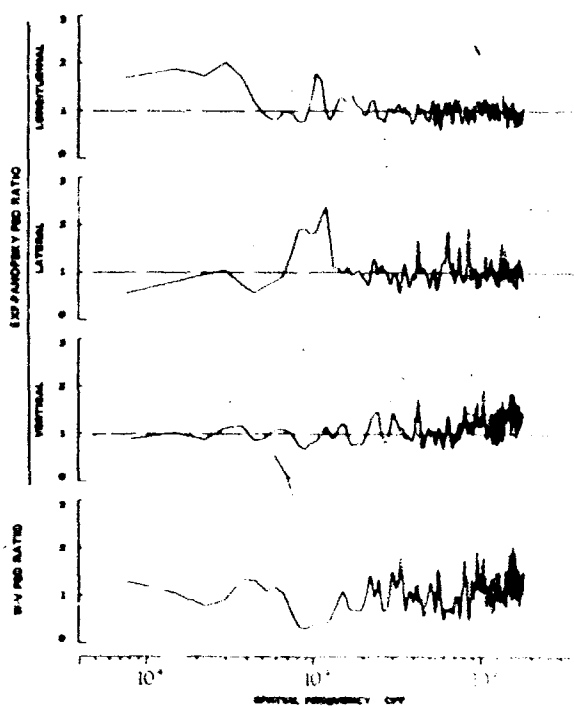
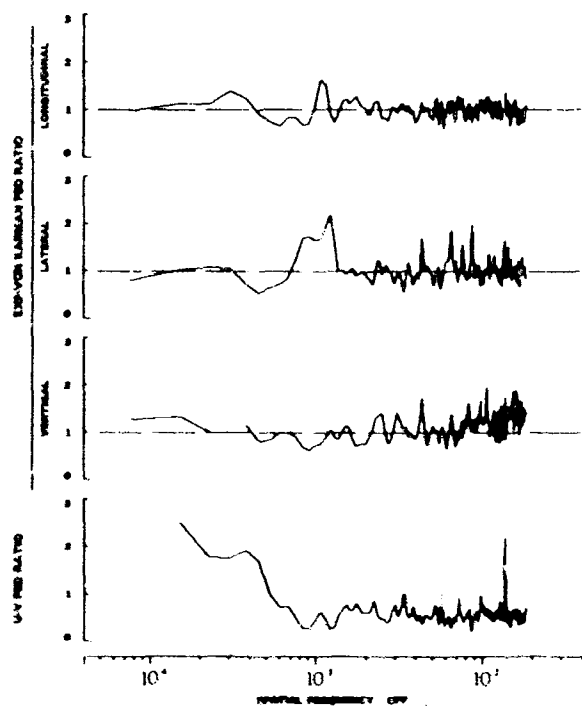
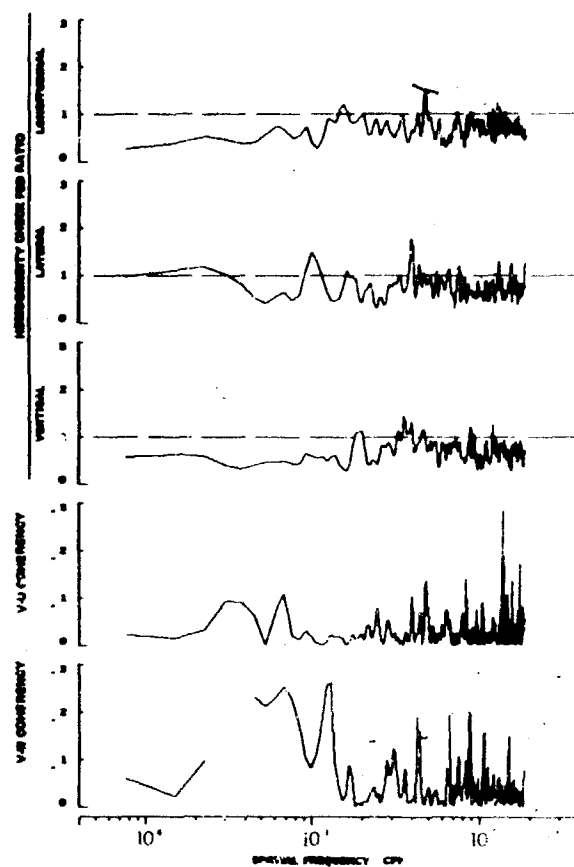
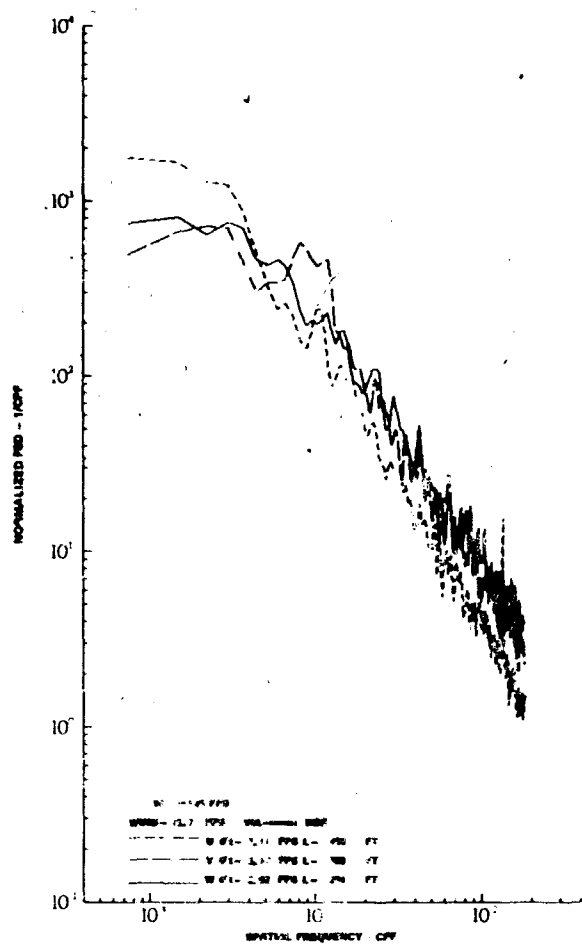
Turbulence Spectra Data For Test 267, Log 5, Category 124213



Turbulence Spectra Data For Test 276, Leg 2, Category 223212

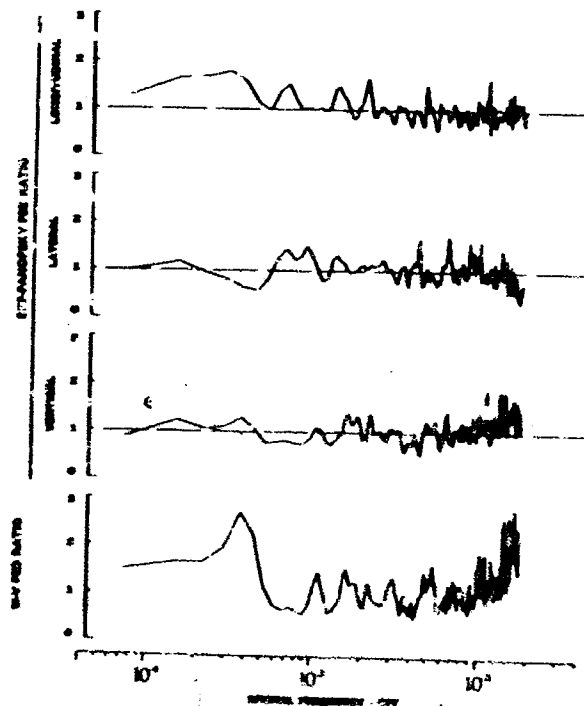
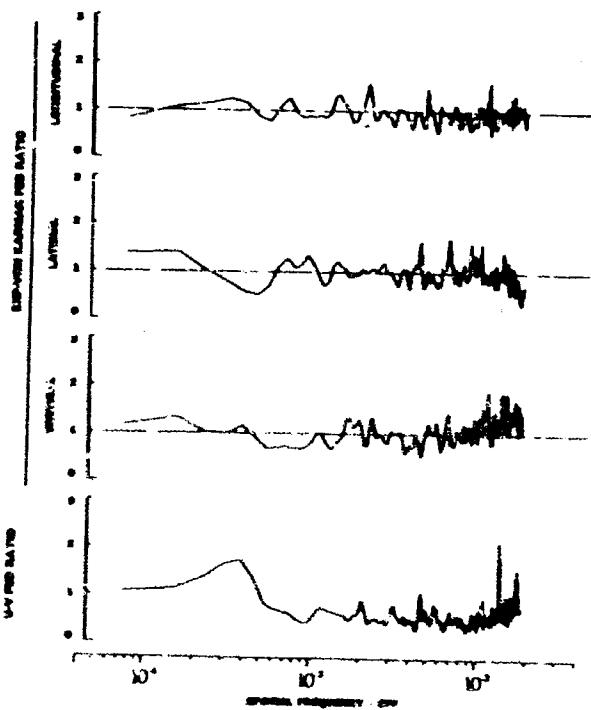
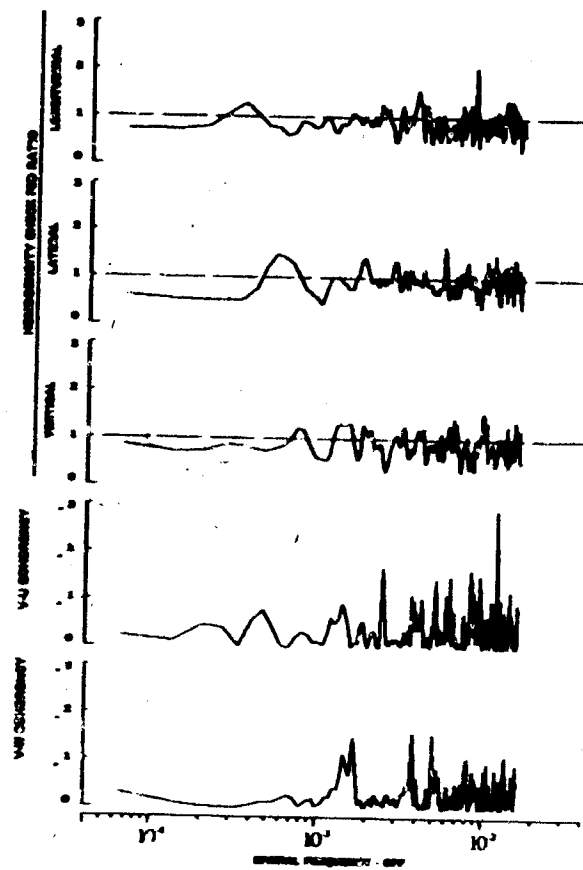
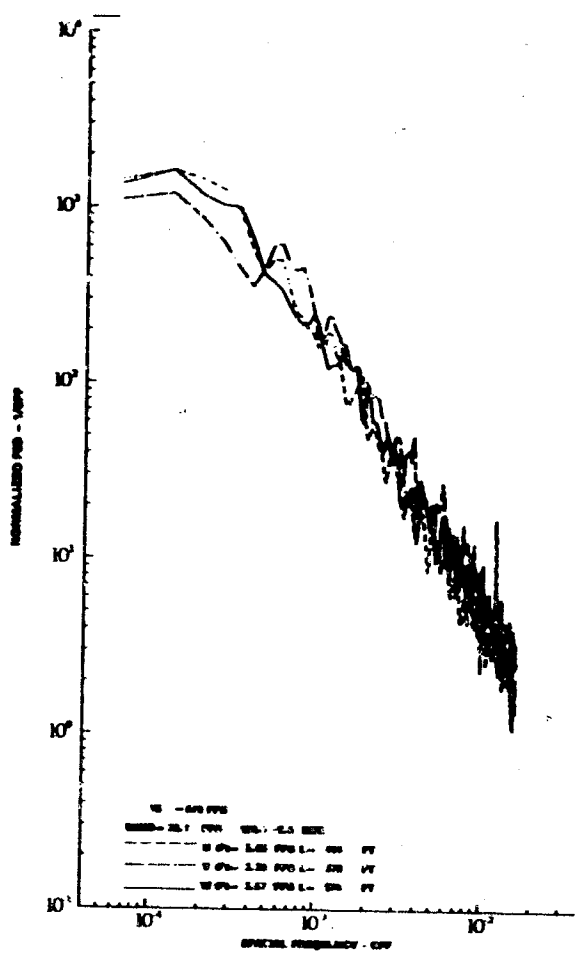


Turbulence Spectra Data For Test 276, Leg 6, Category 223212

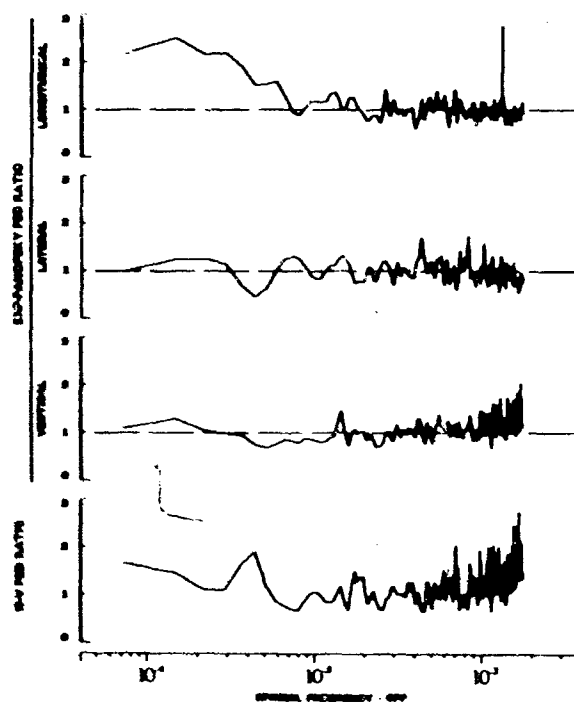
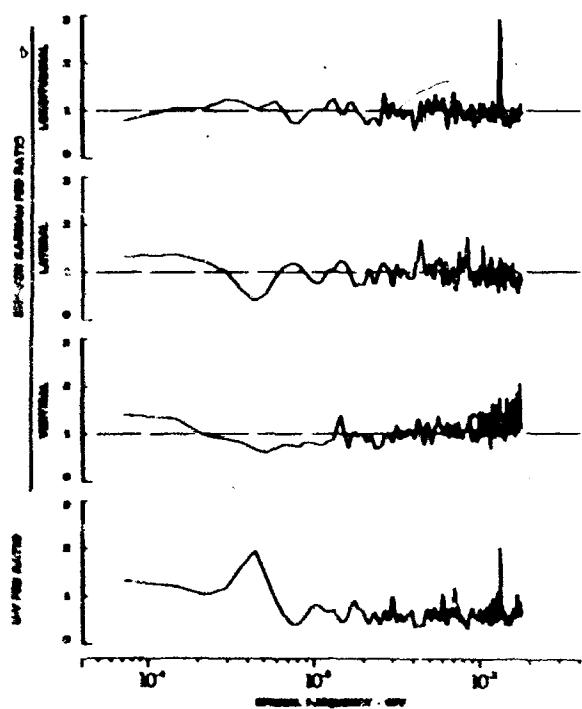
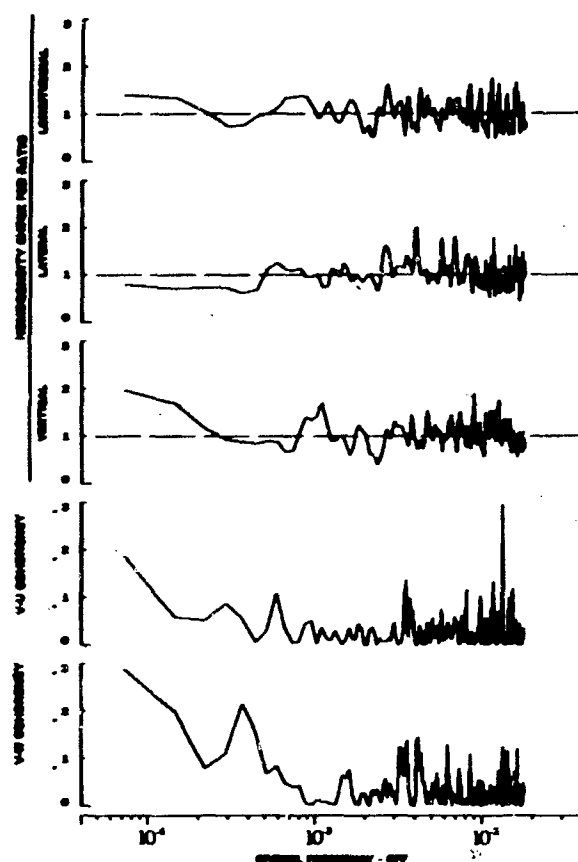
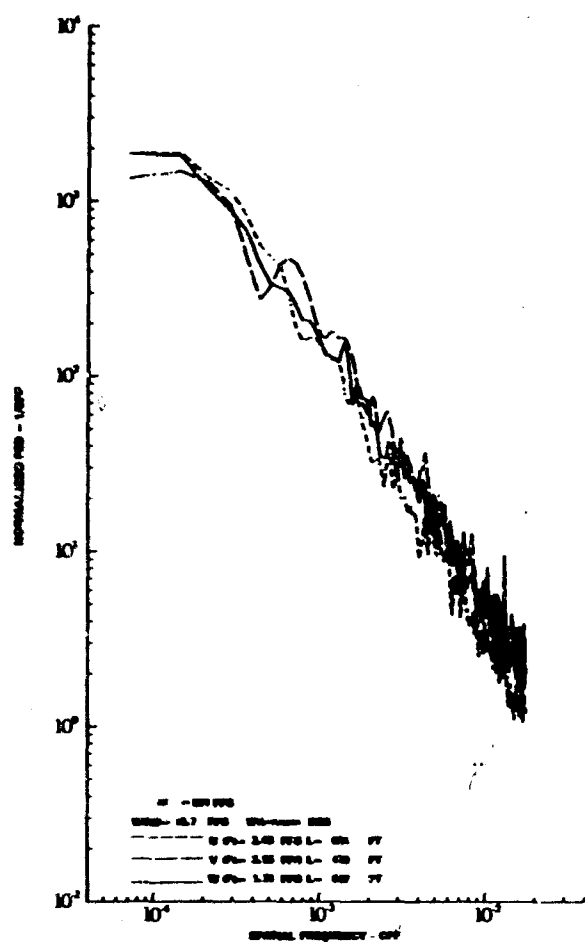


Turbulence Spectra Data for Test 276, Log 8, Category 423212

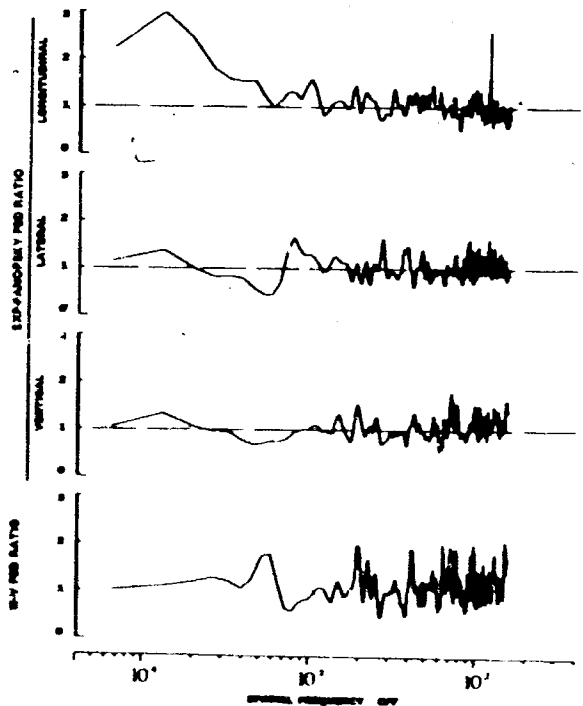
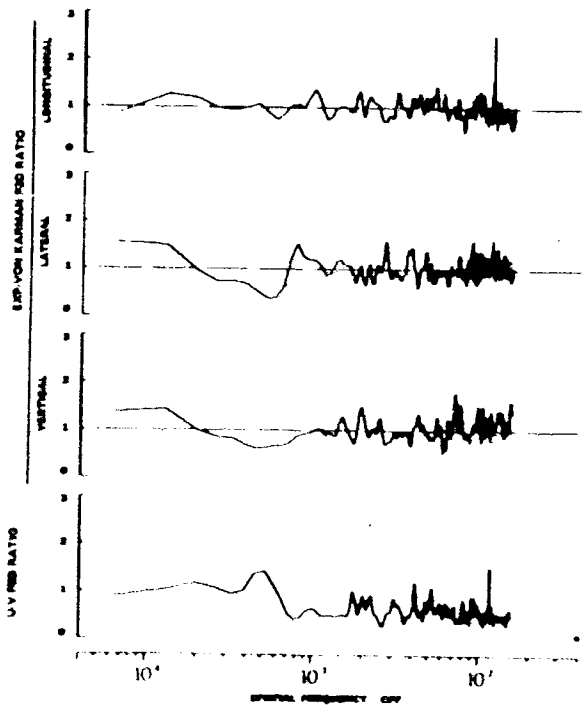
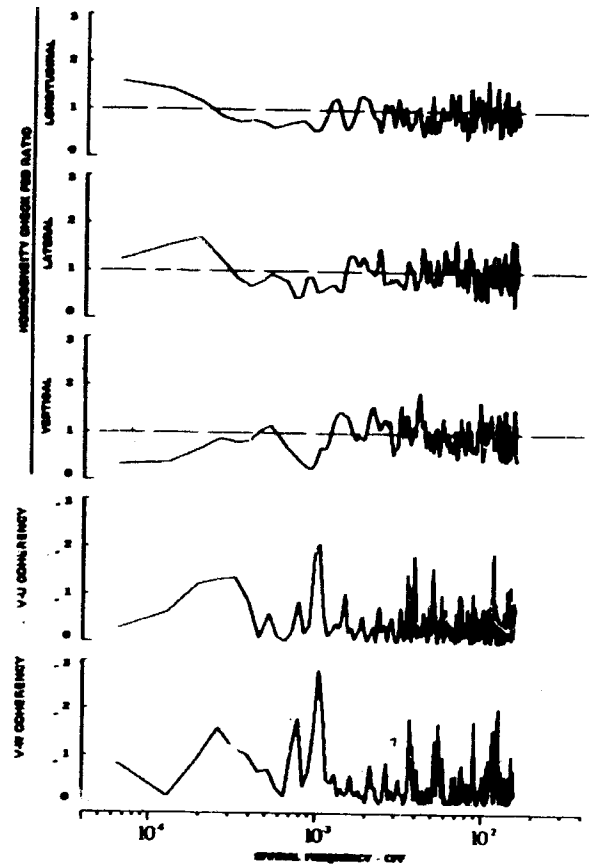
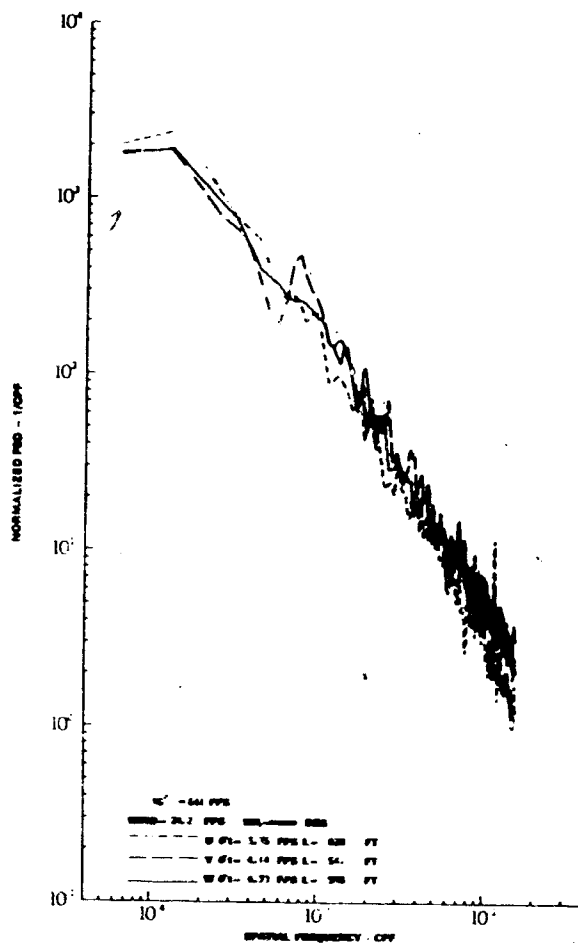




Turbulence Spectra Data For Test 277, Leg 1, Category 422312

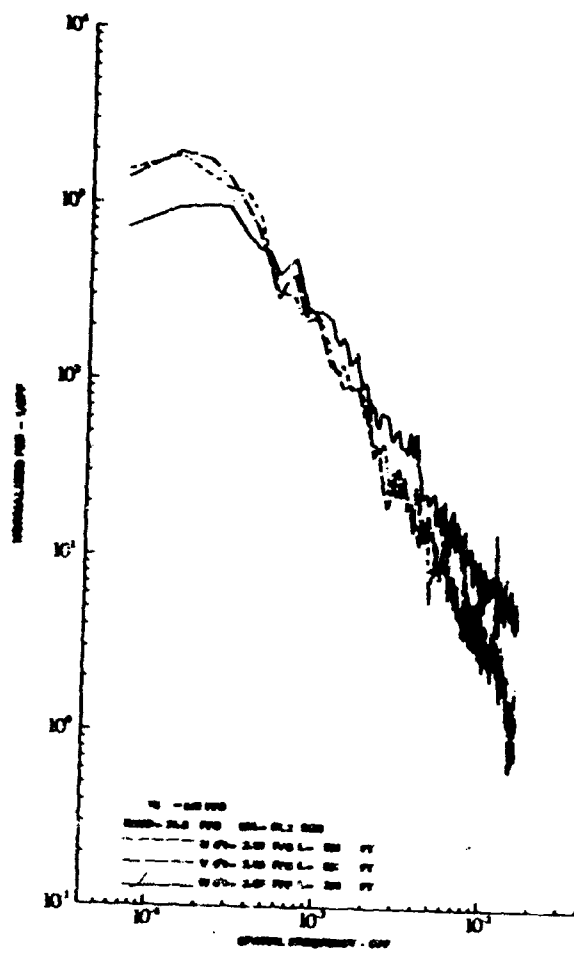


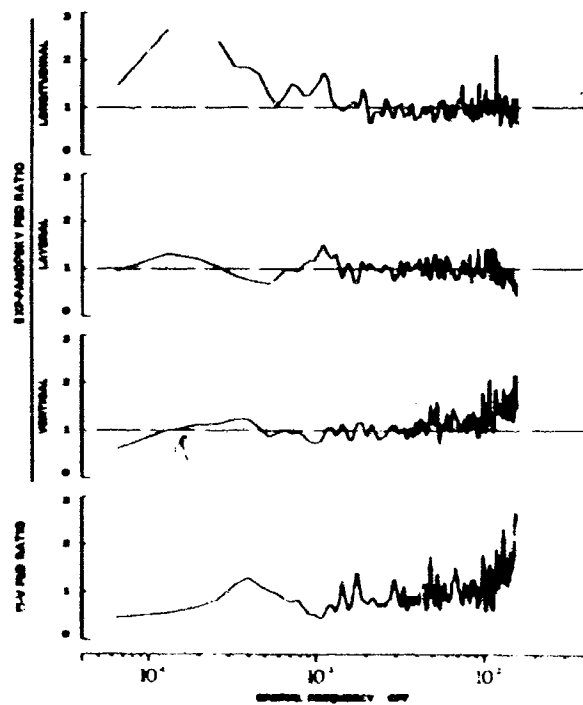
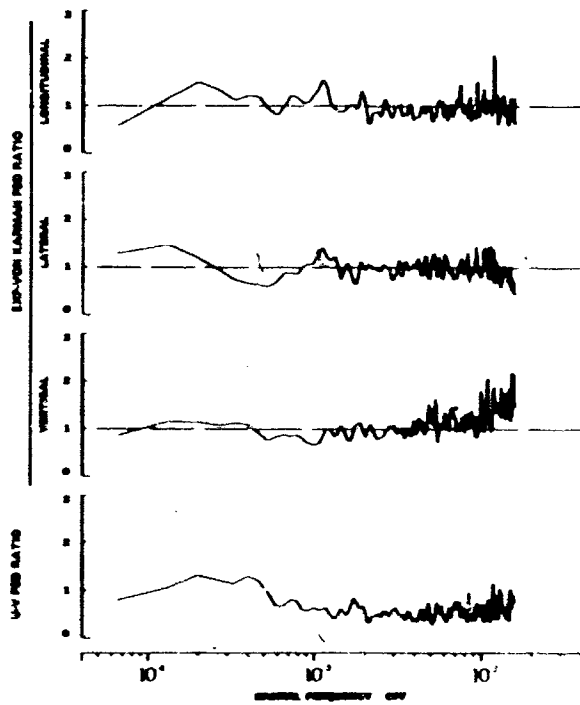
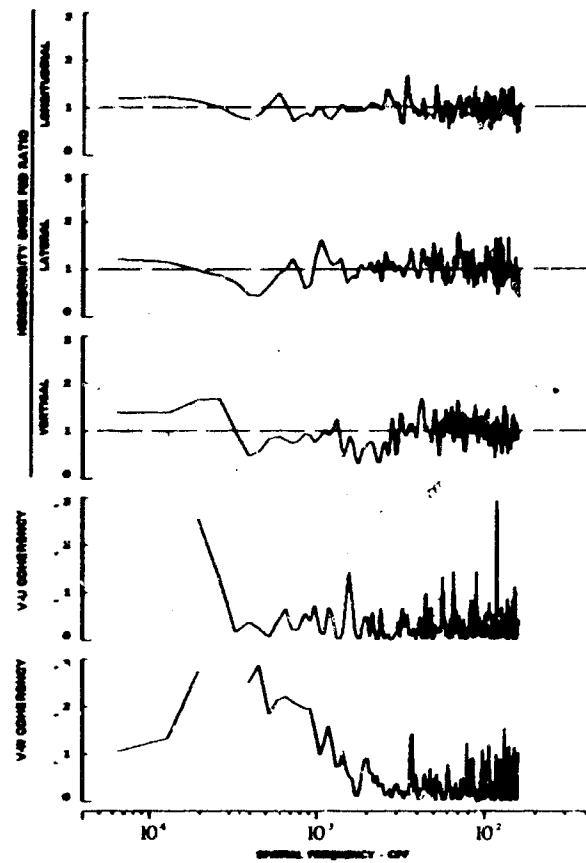
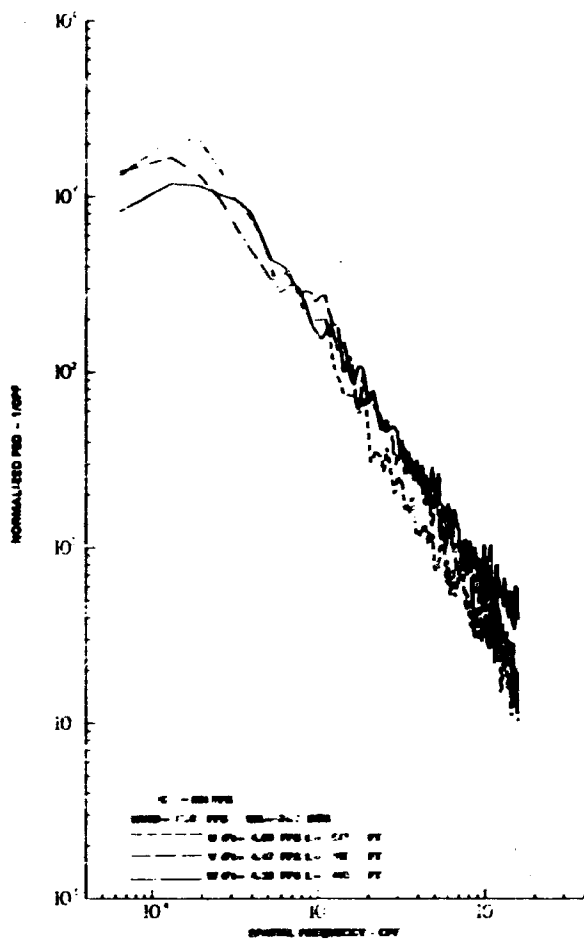
Turbulence Spectra Data for Test 277, Log 3, Category 223312



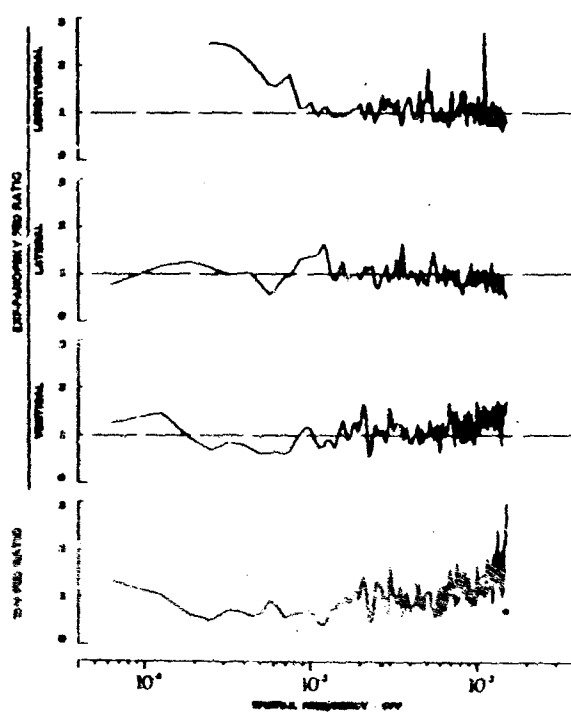
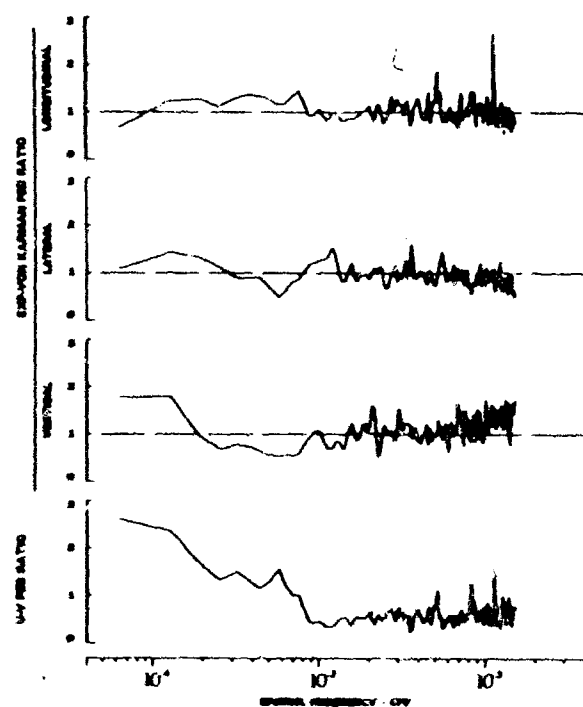
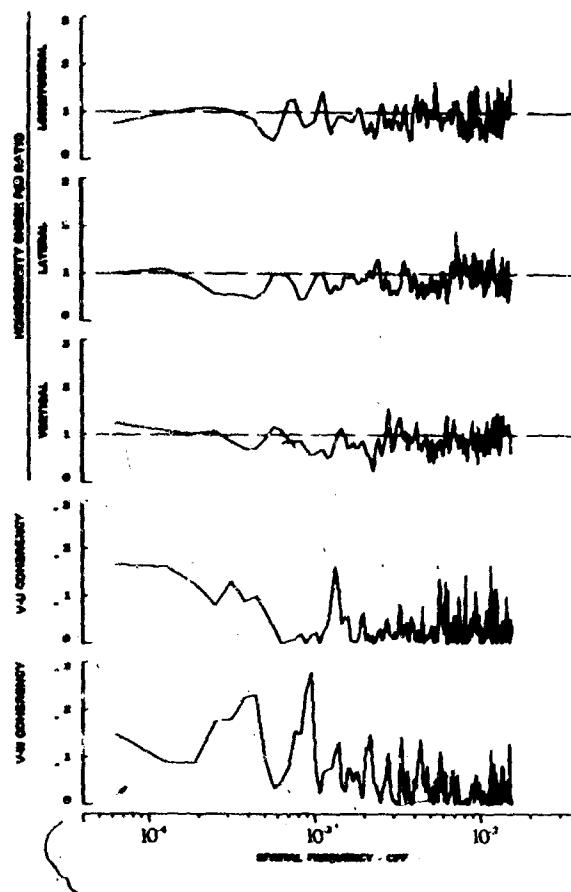
Turbulence Spectra Data For Test 277, Leg 5, Category 223312



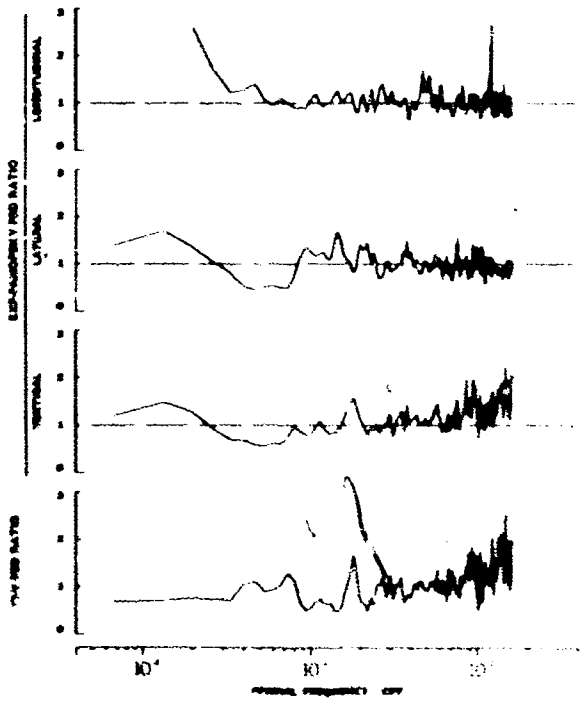
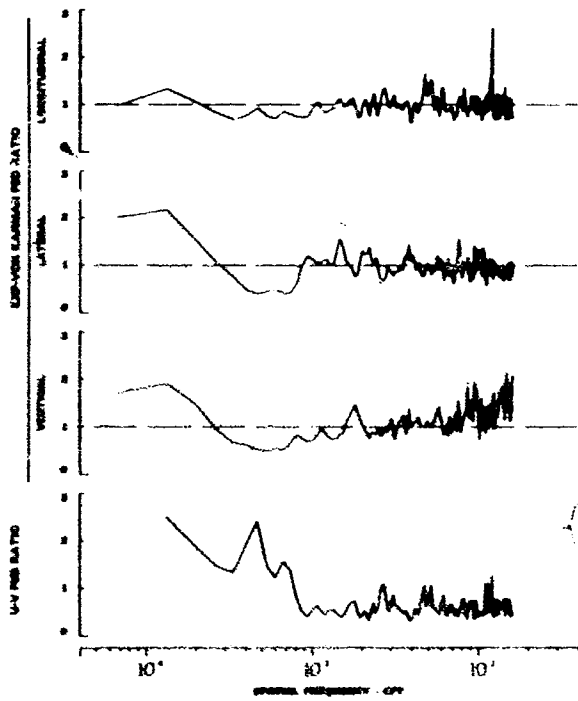
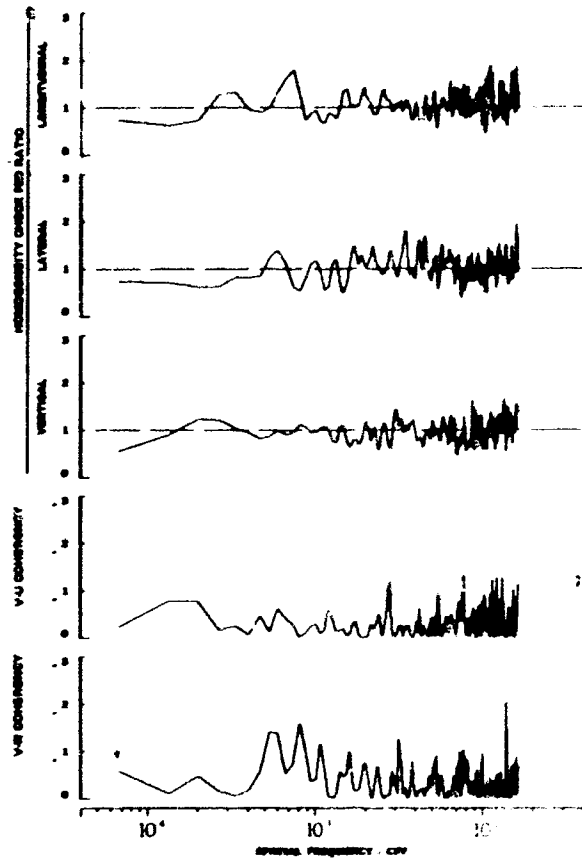
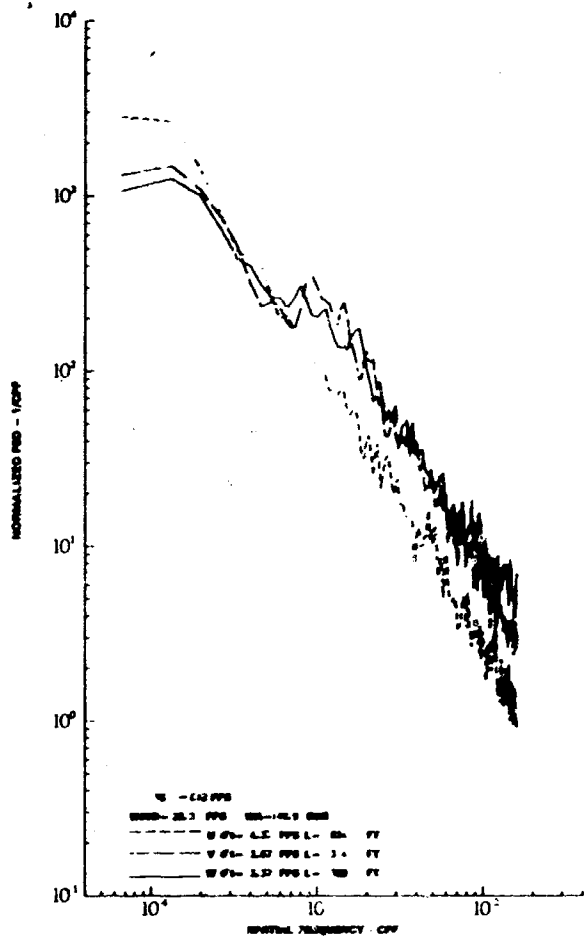




Turbulence Spectra Data for Test 279, Log 3, Category 223212

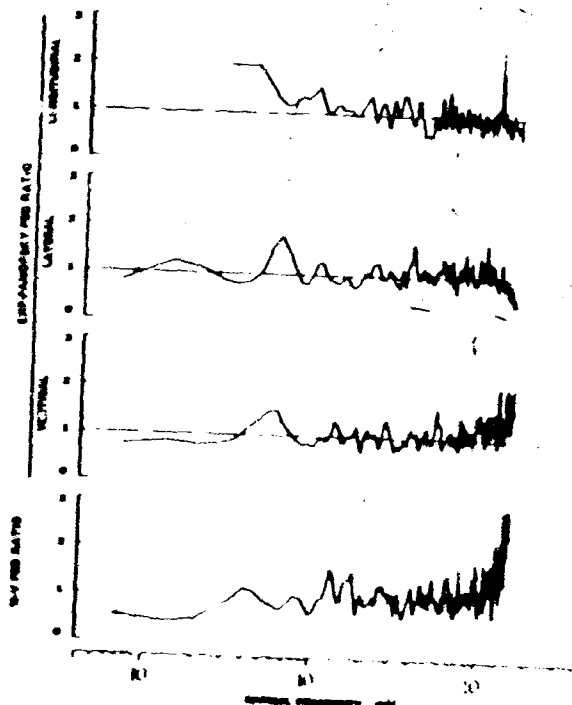
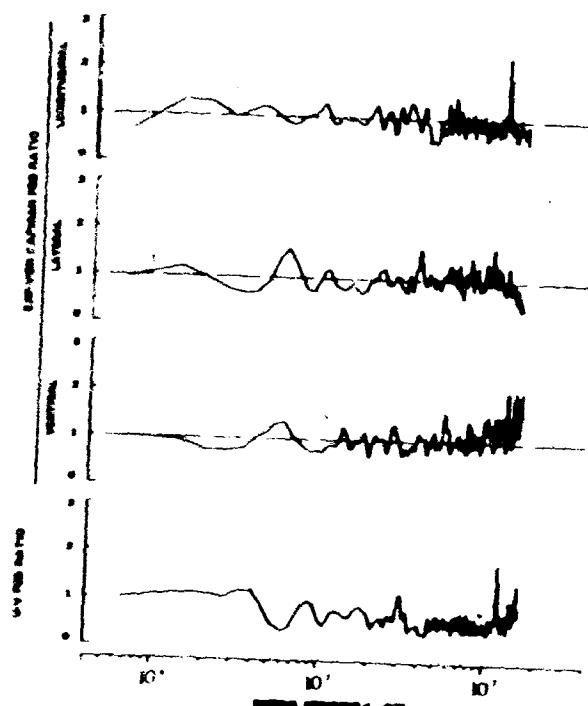
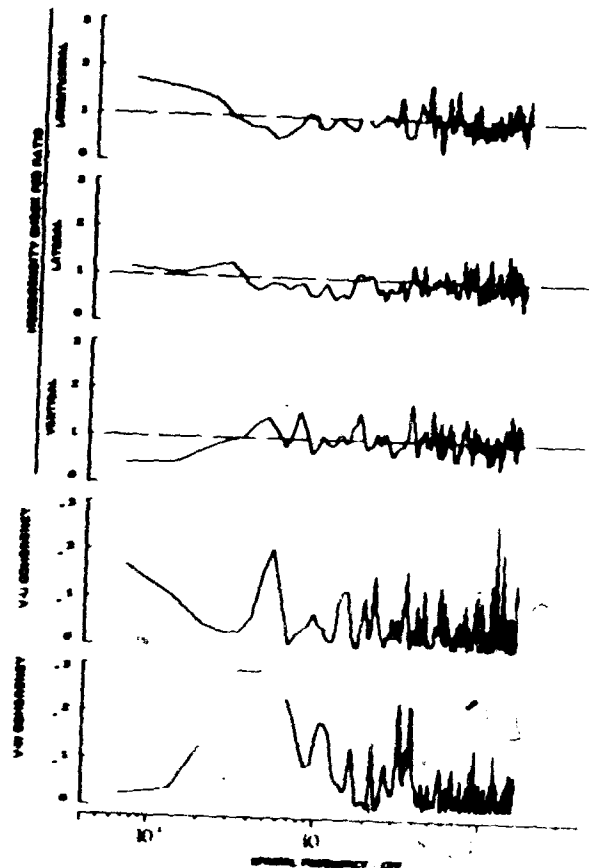
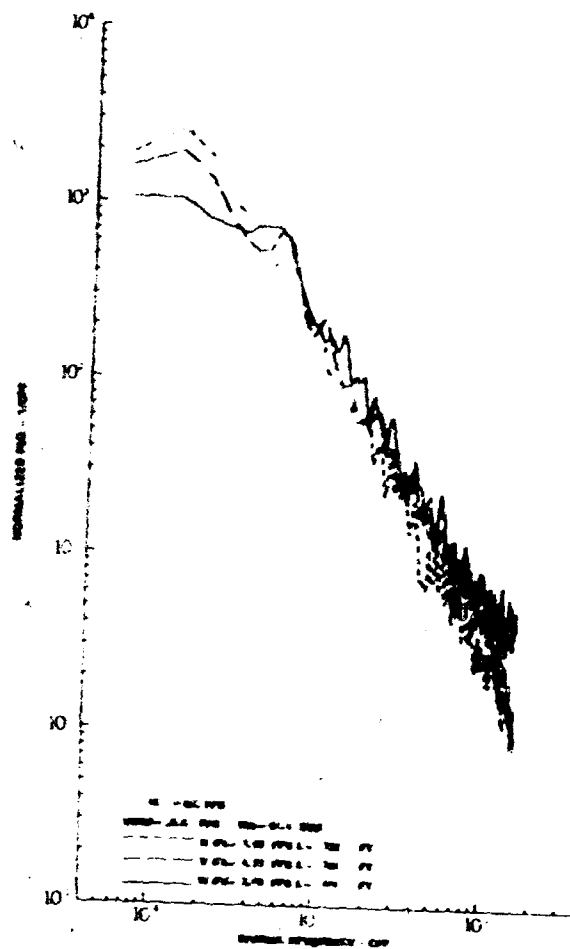


Turbulence Spectra Data For Test 279, Log 5, Category 224212

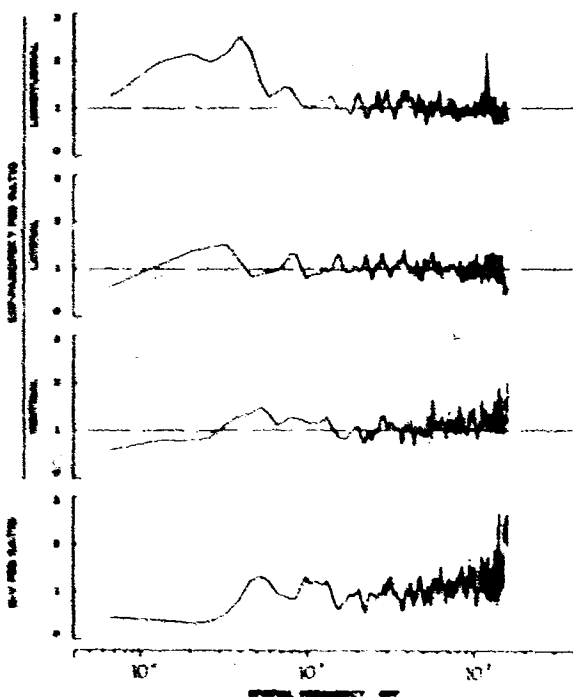
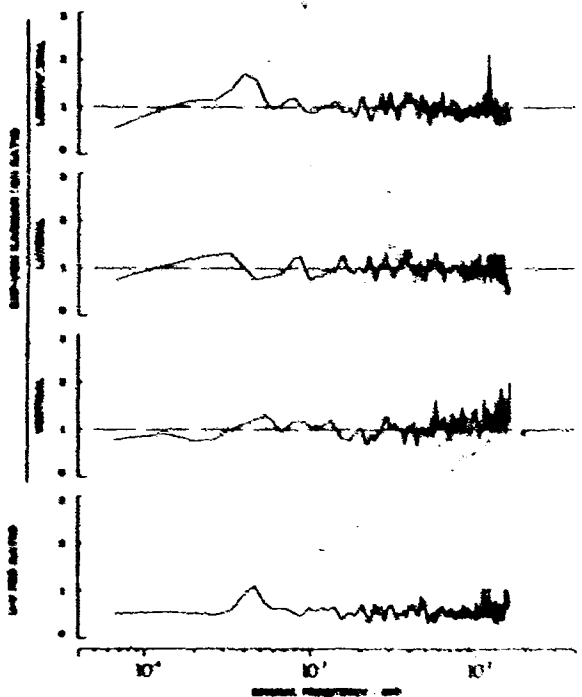
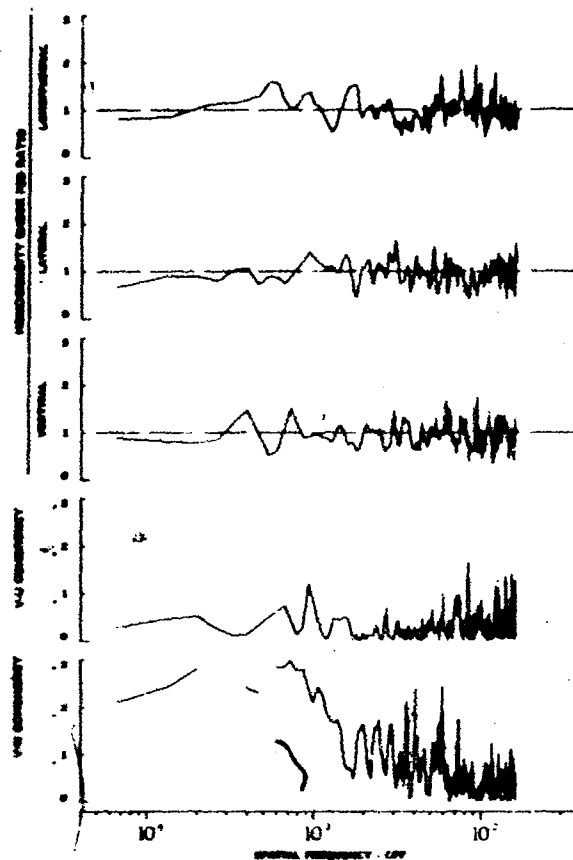
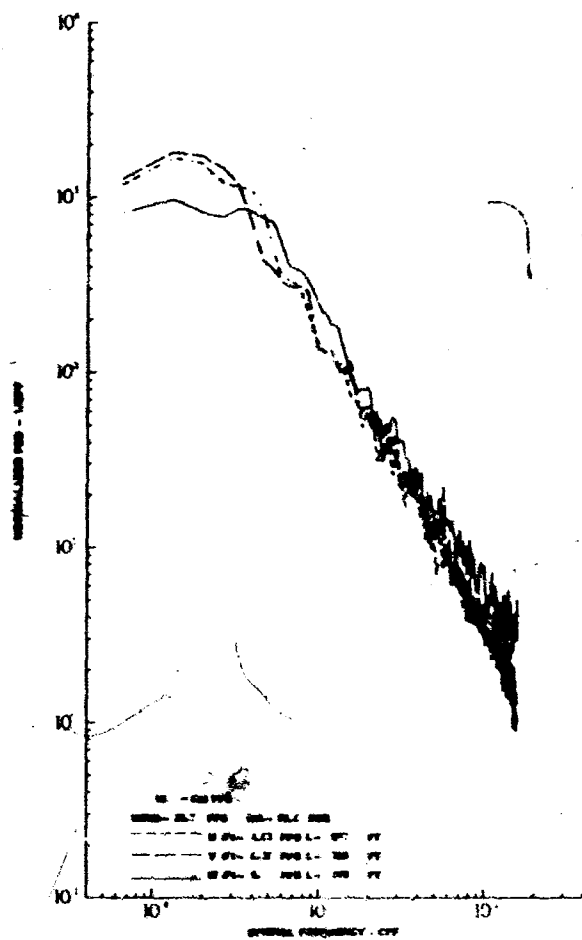


Turbulence Spectra Data For Test 279, Log 7, Category 423212

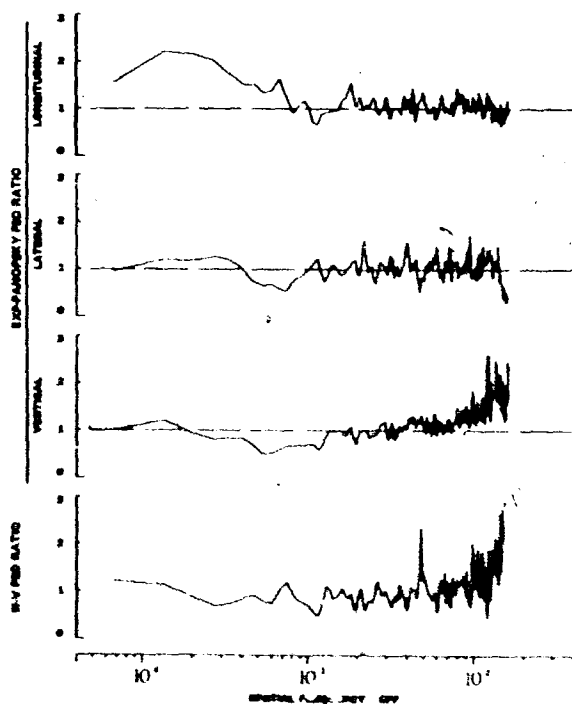
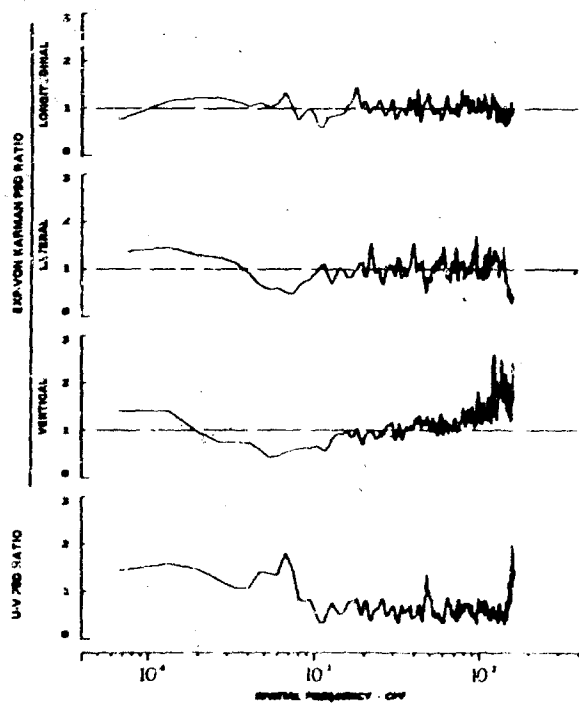
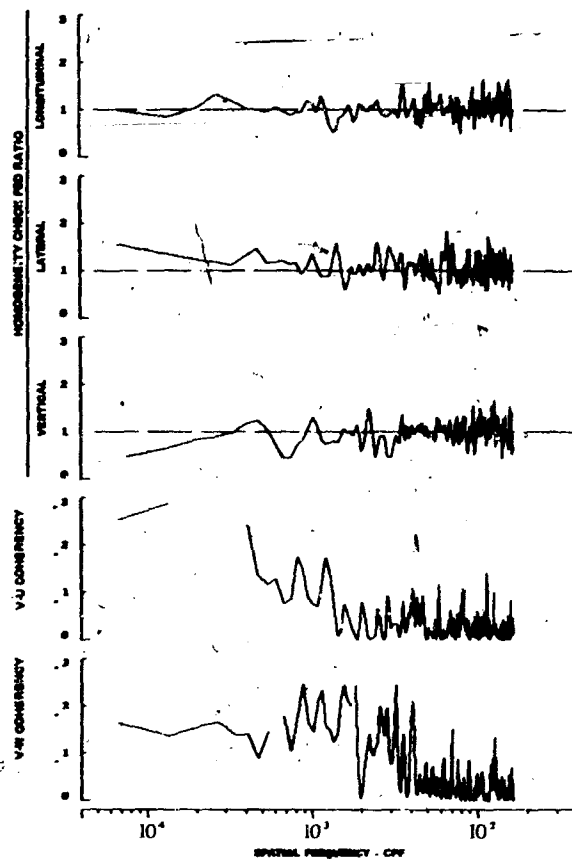
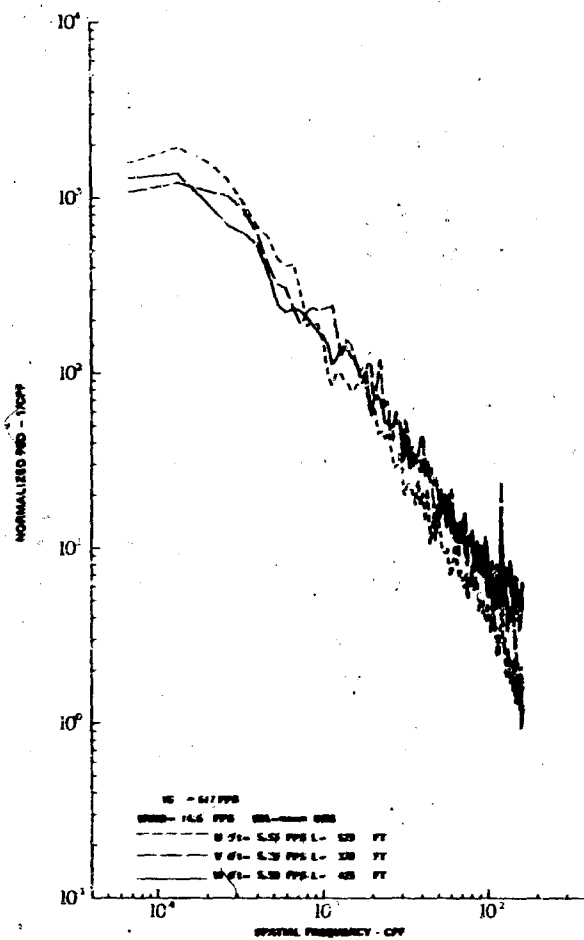




Turbulence Spectra Data for Test 200, Log 2, Category 223312

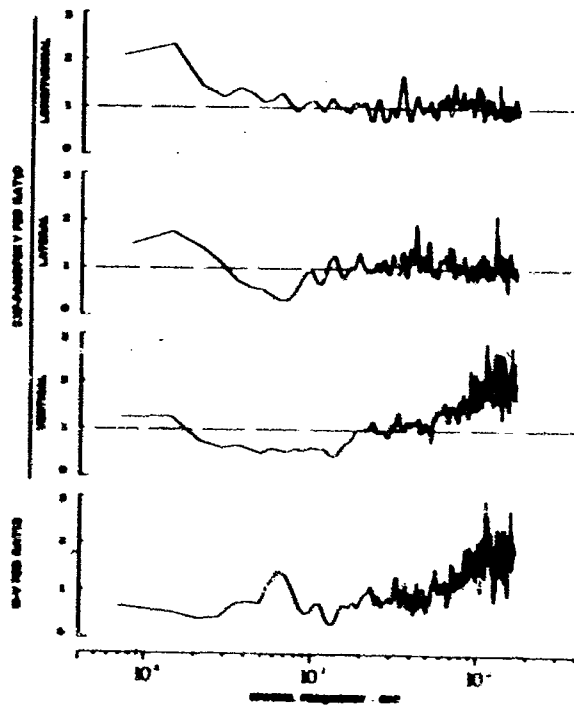
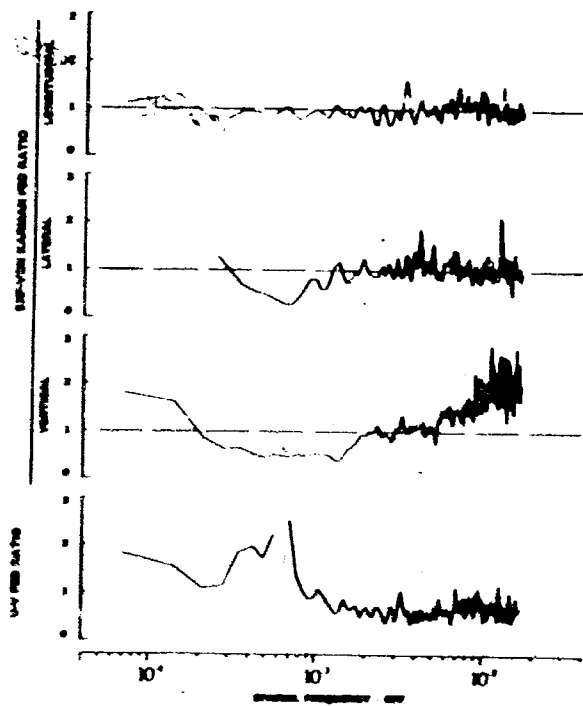
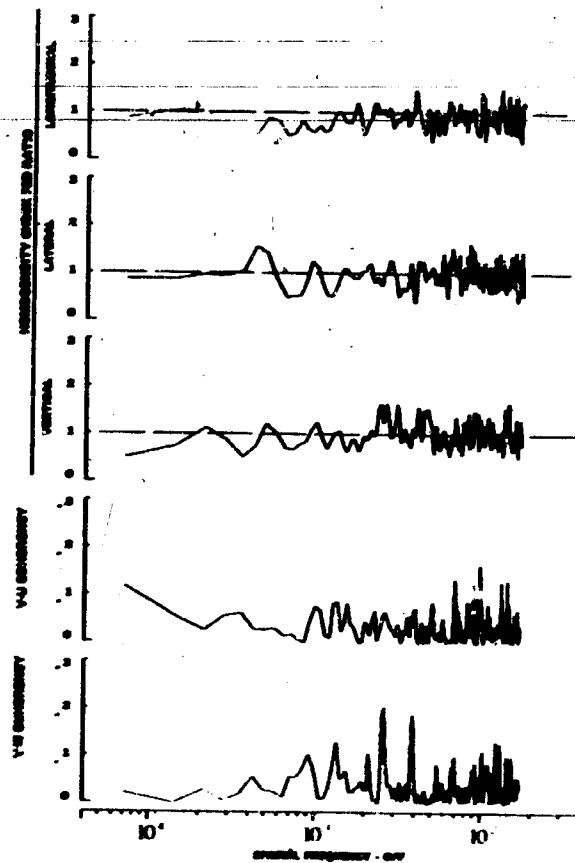
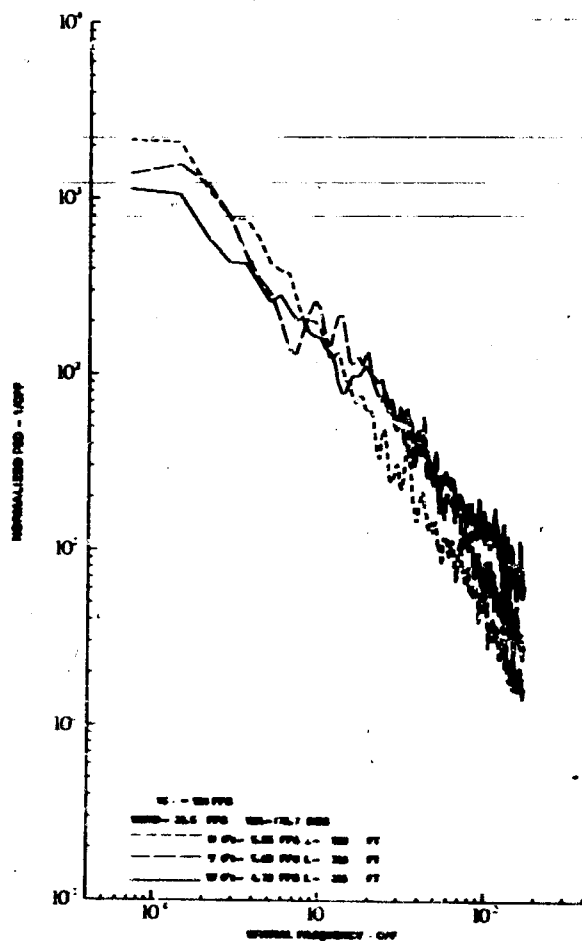


Turbulence Spectra Data For Test 280, Log 4, Category 220512

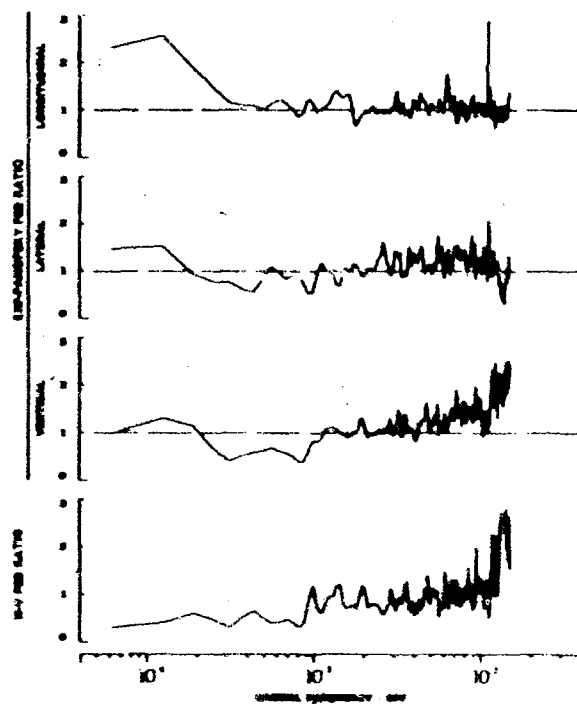
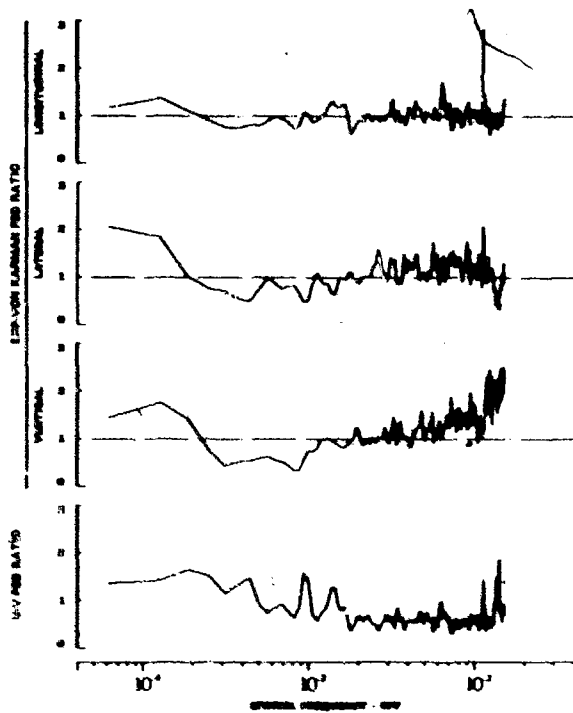
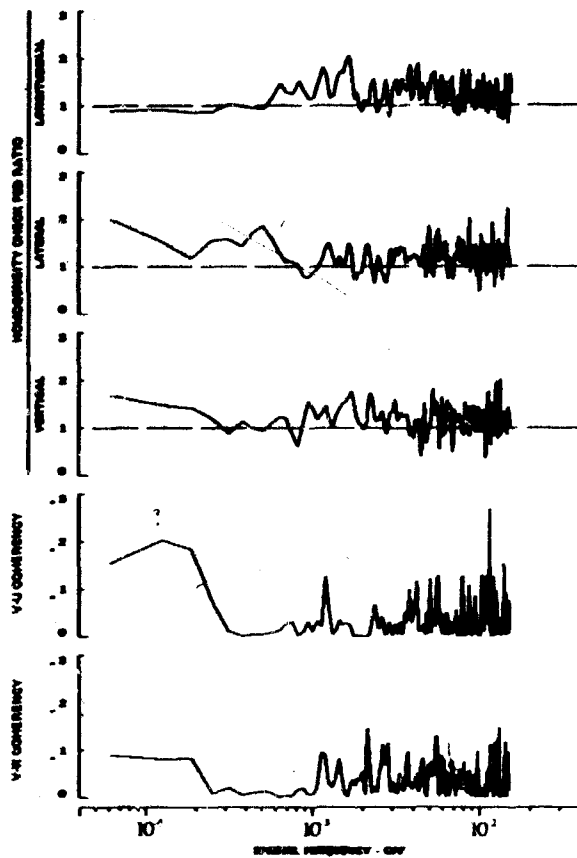
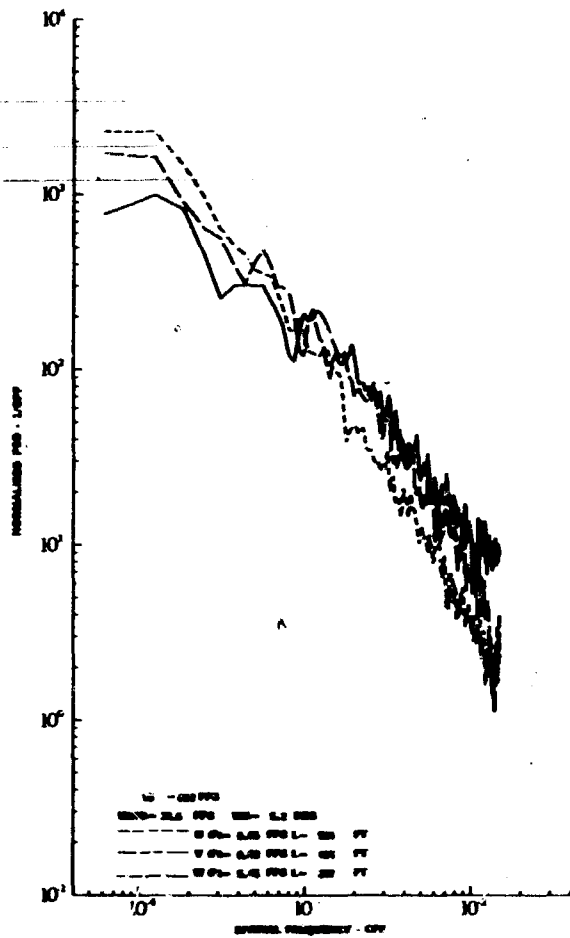


Turbulence Spectra Data For Test 282, Leg 2, Category 213212

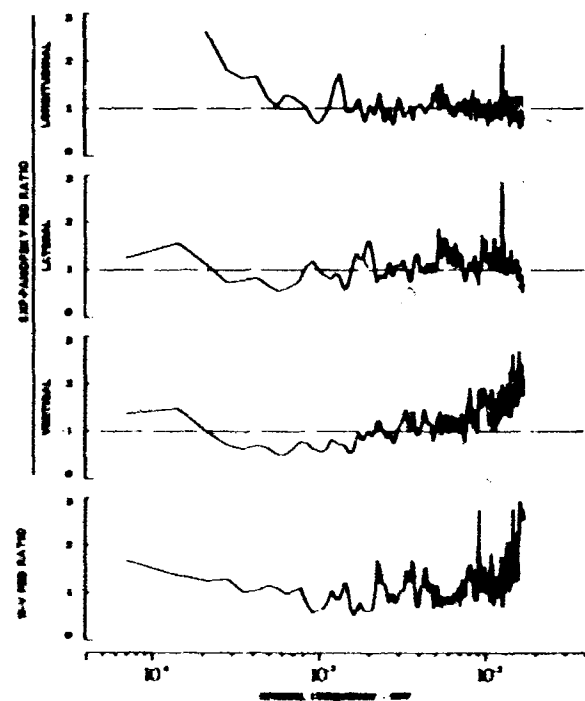
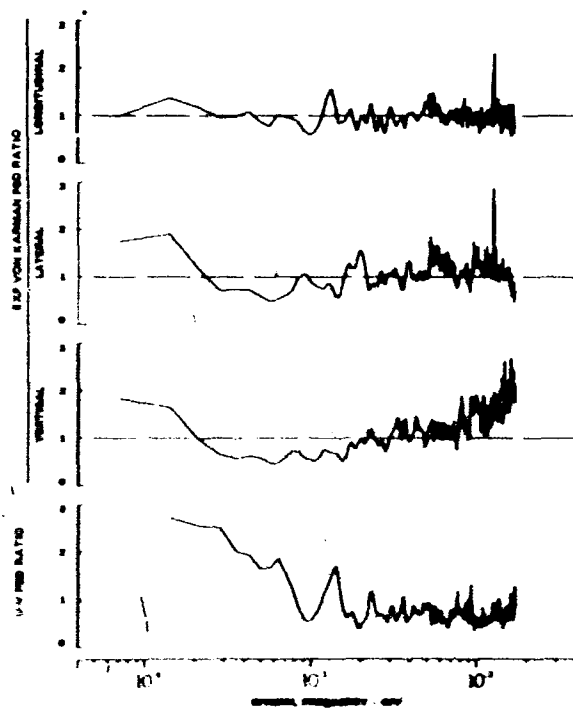
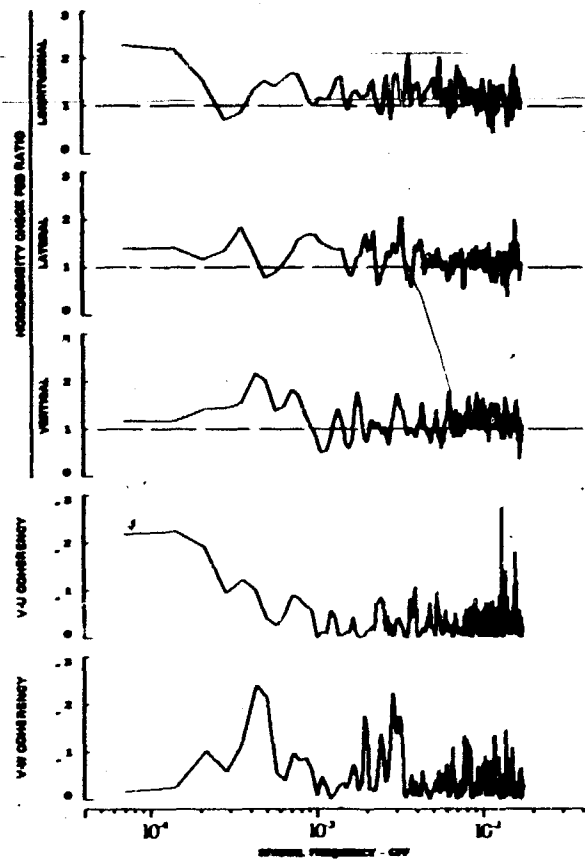
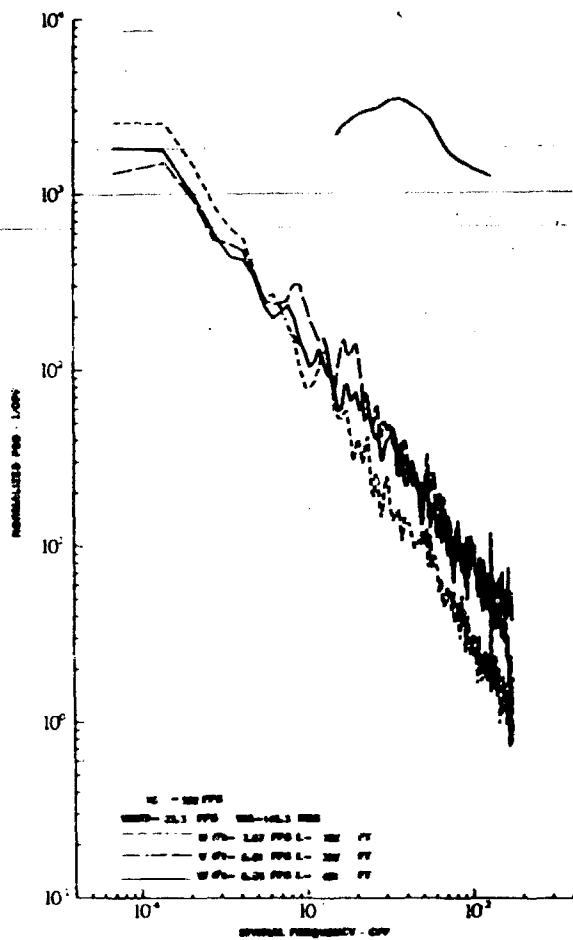




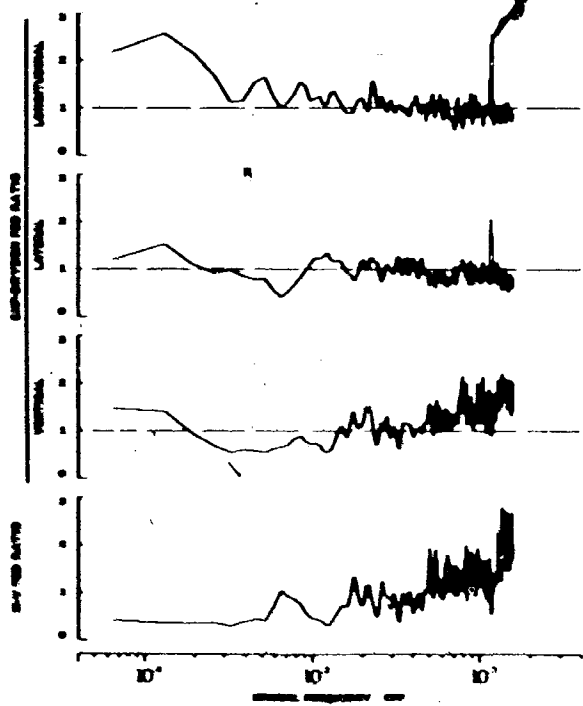
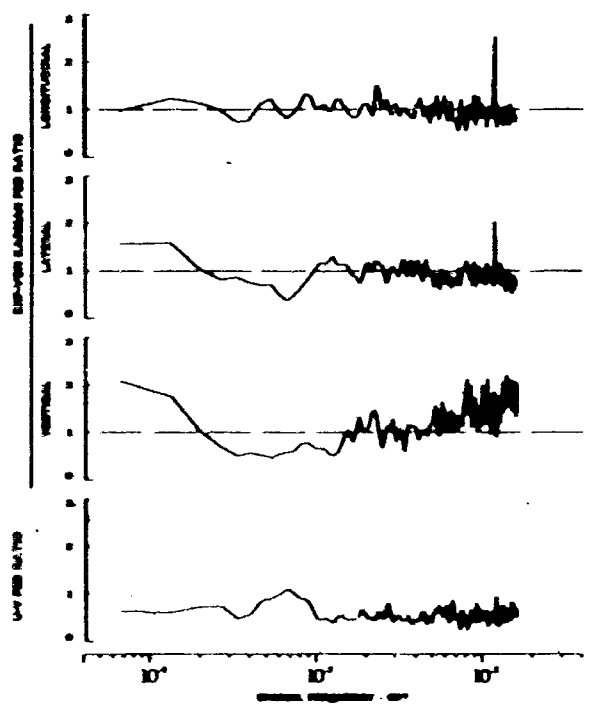
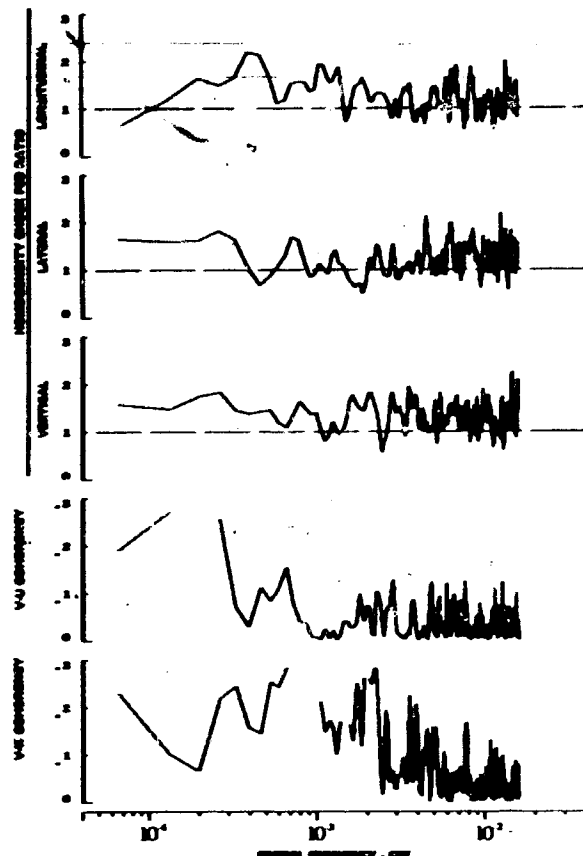
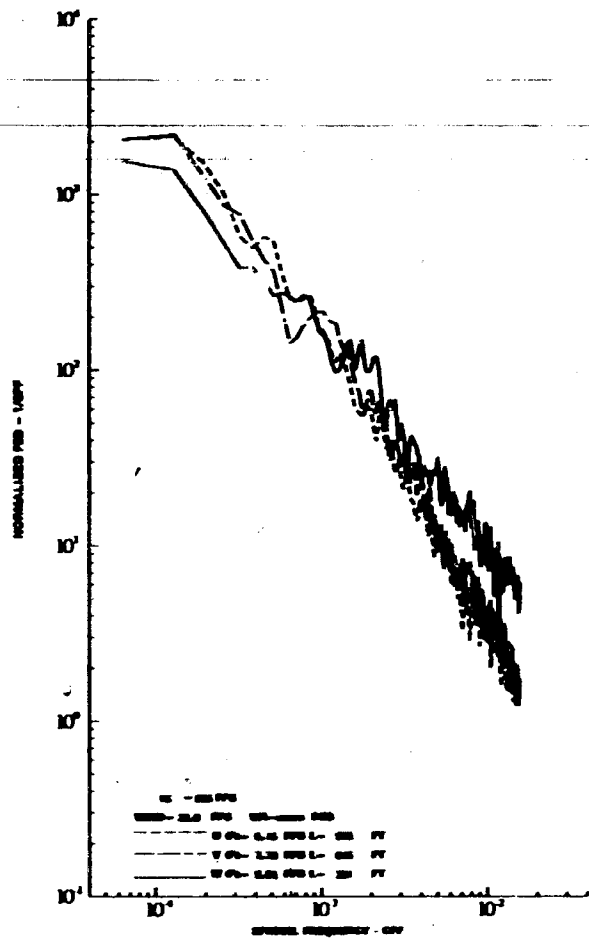
Turbulence Spectra Data For Test 282, Log 8, Category 414212



Turbulence Spectra Data For Test 283, Log 1, Category 413312

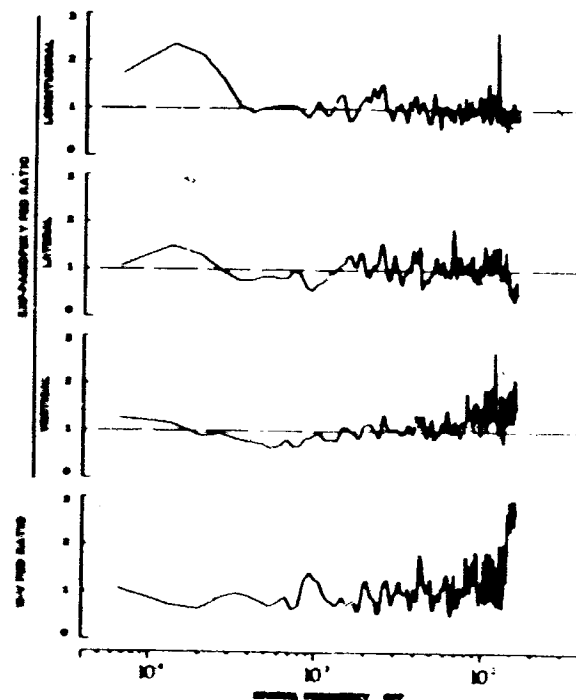
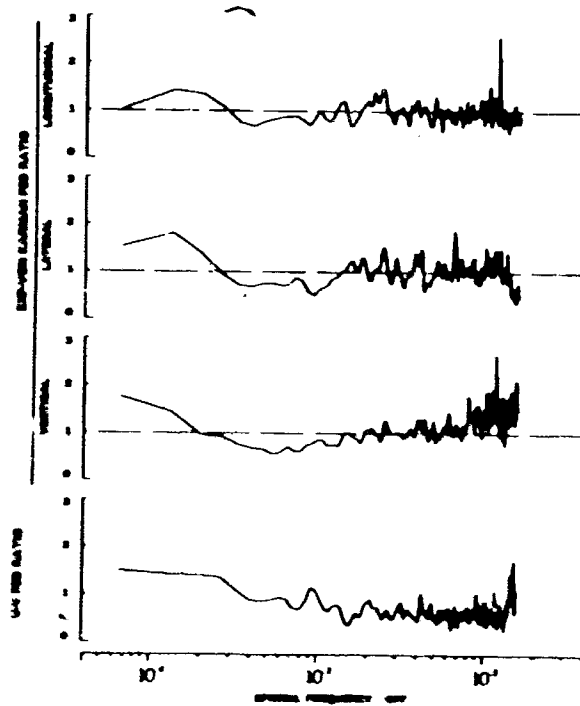
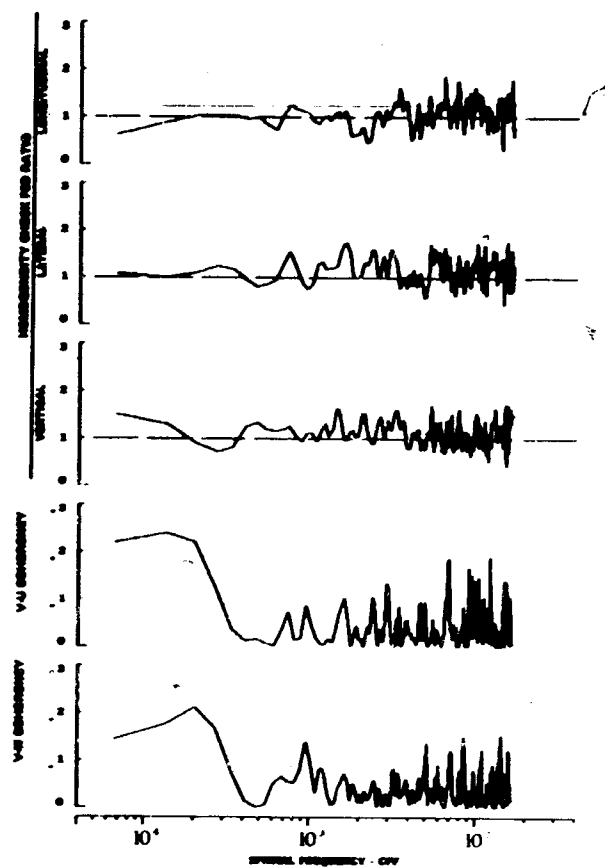


Turbulence Spectra Data For Test 283, Leg 3, Category 214312

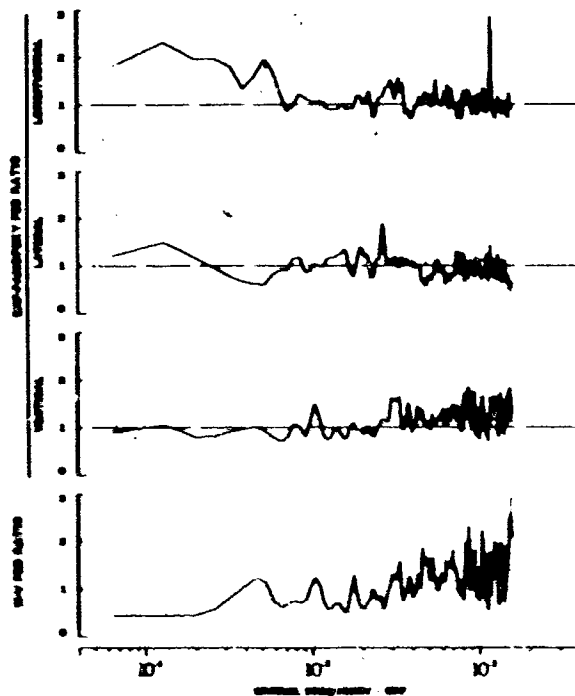
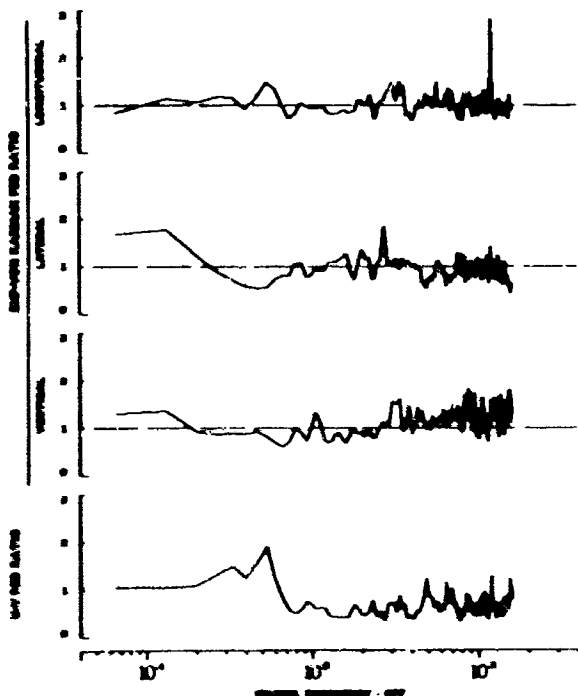
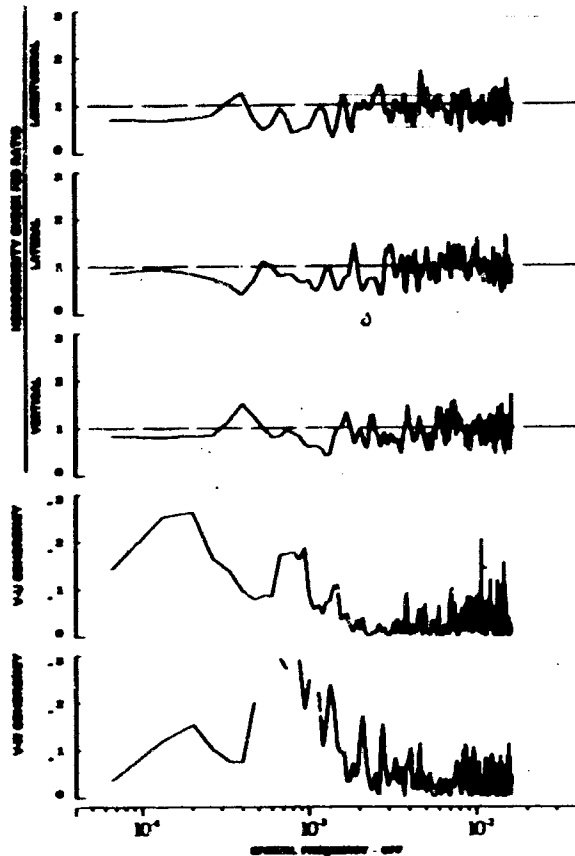
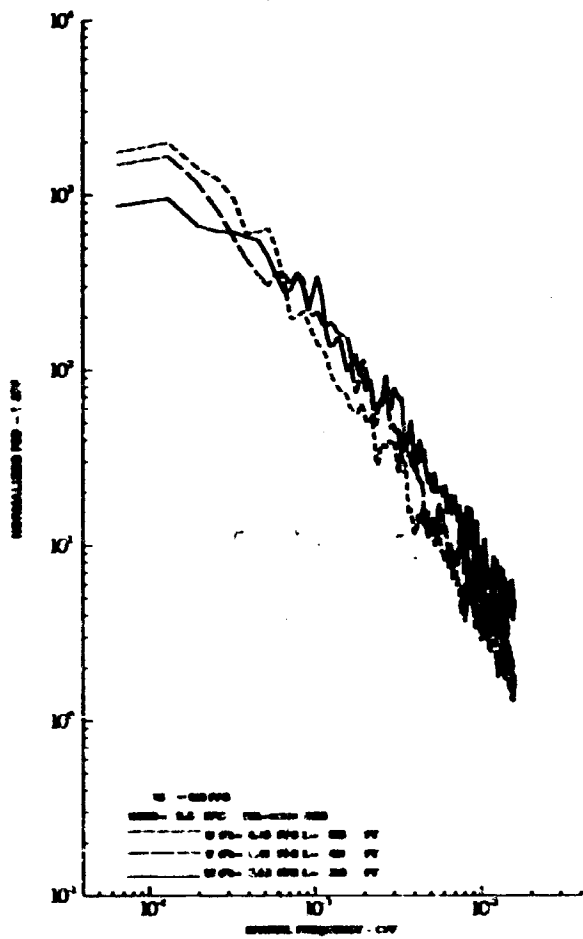


Turbulence Spectra Data For Test 283, Log 5, Category 214312

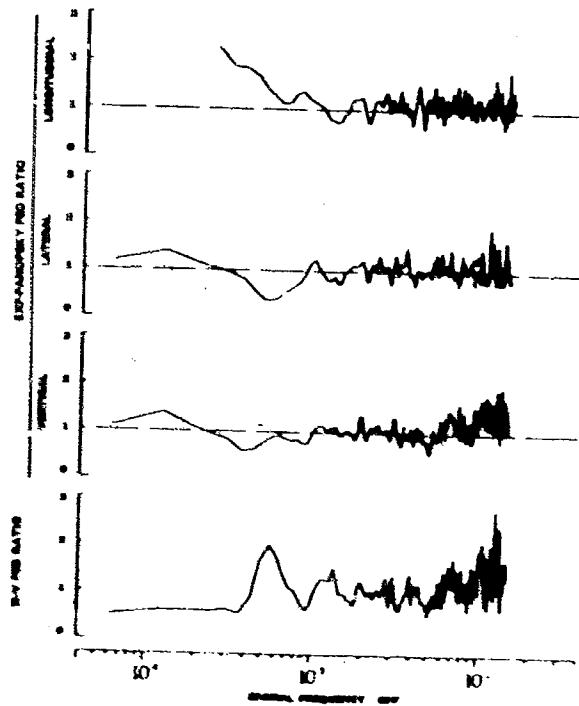
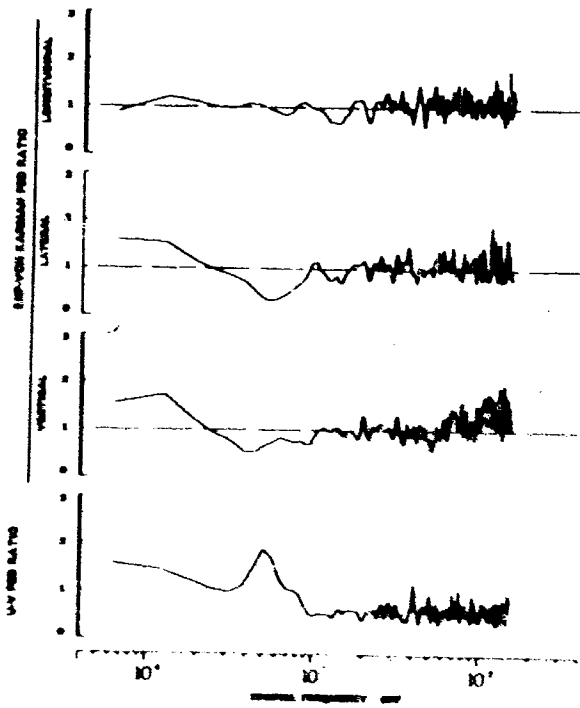
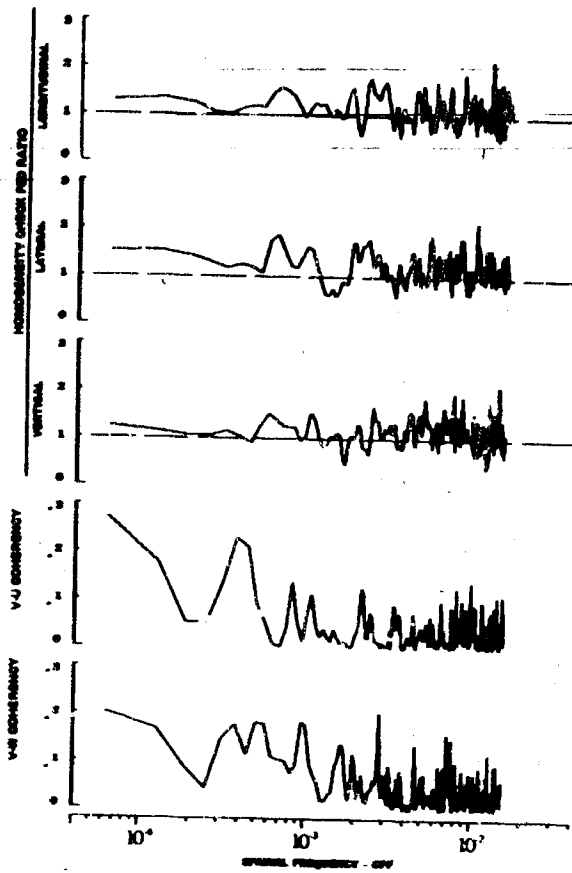
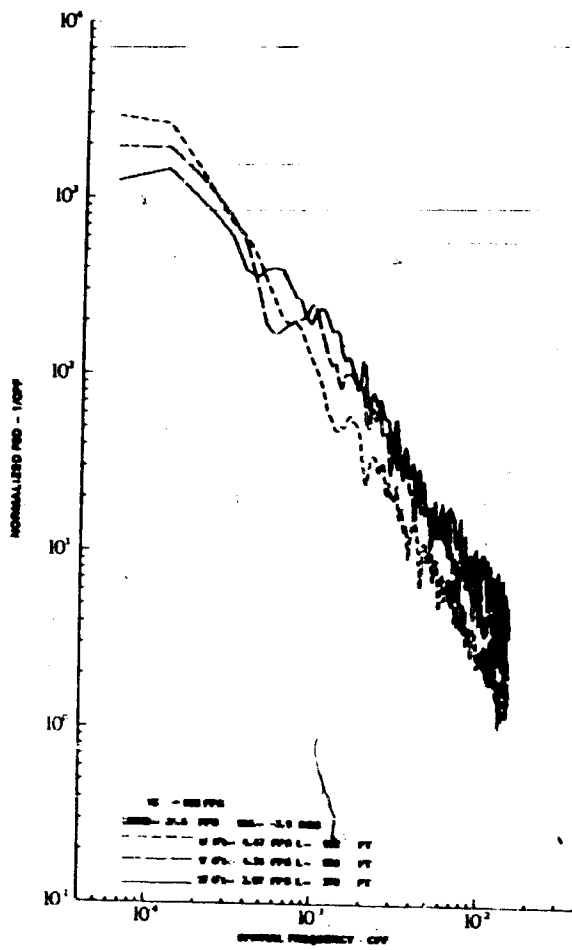




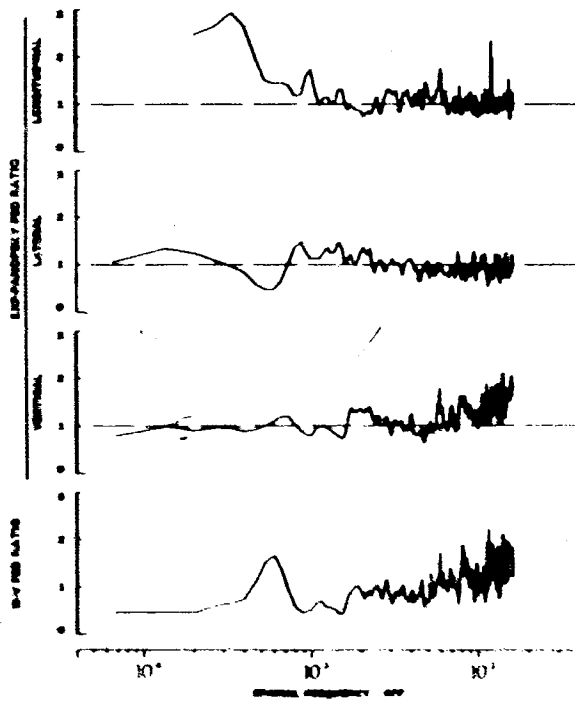
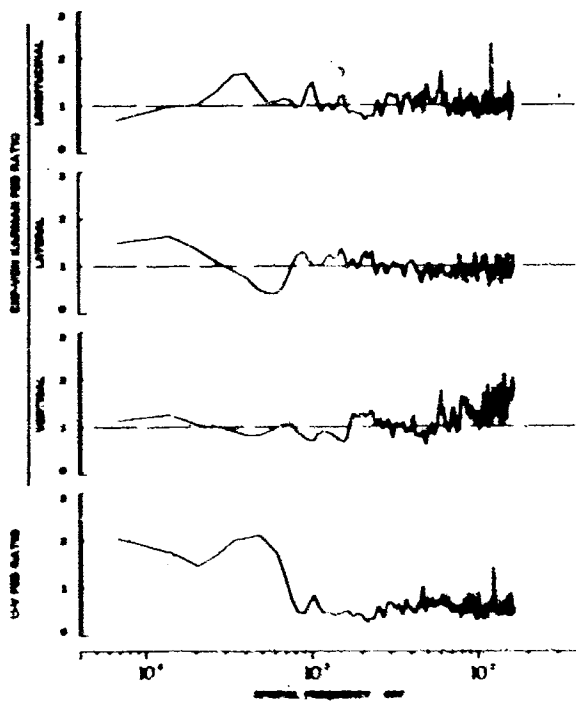
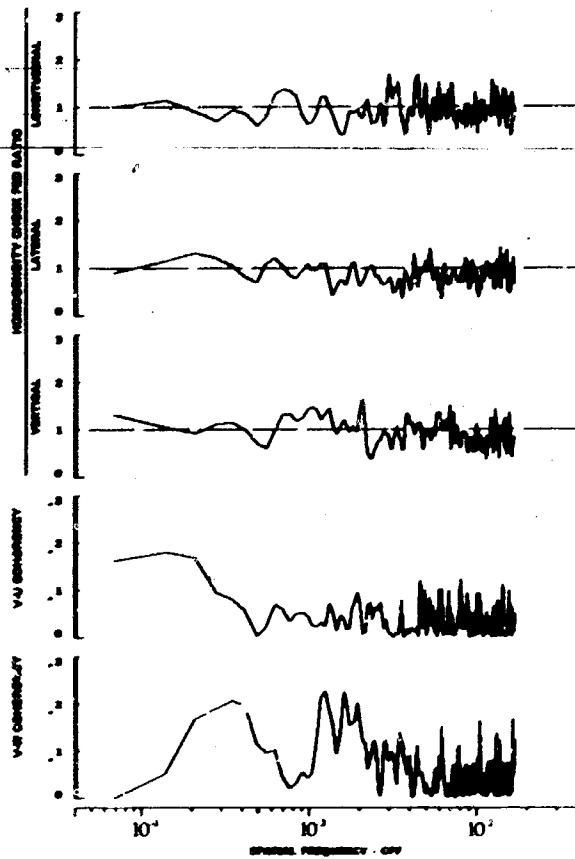
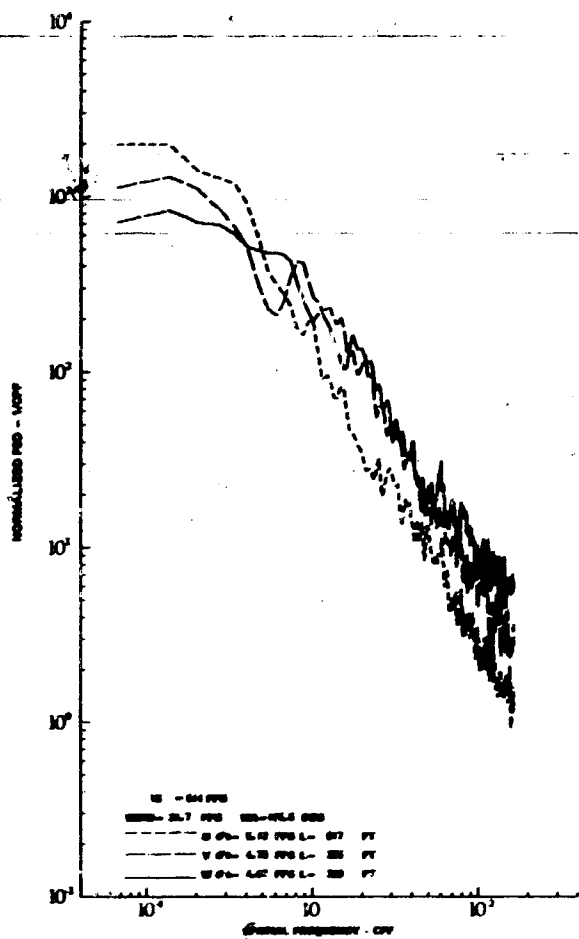
Turbulence Spectra Data For Test 287, Log 1, Category 424212



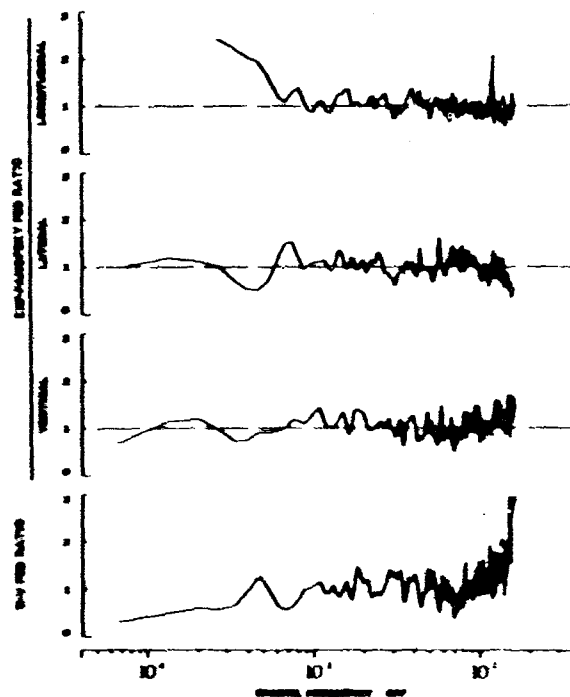
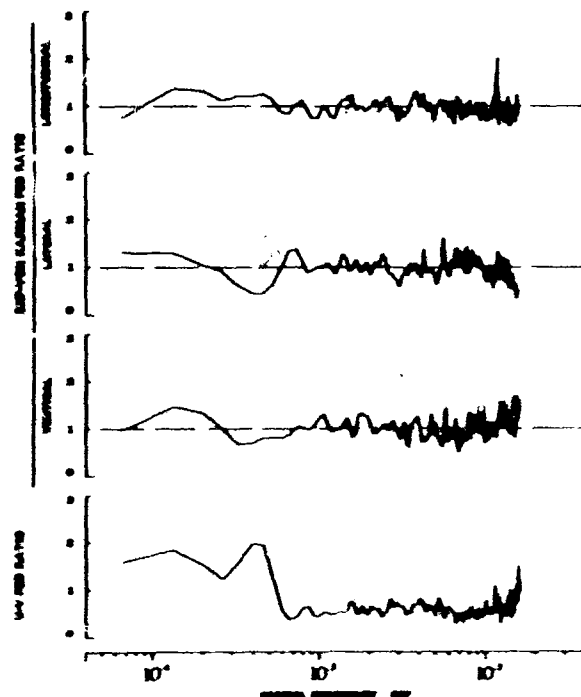
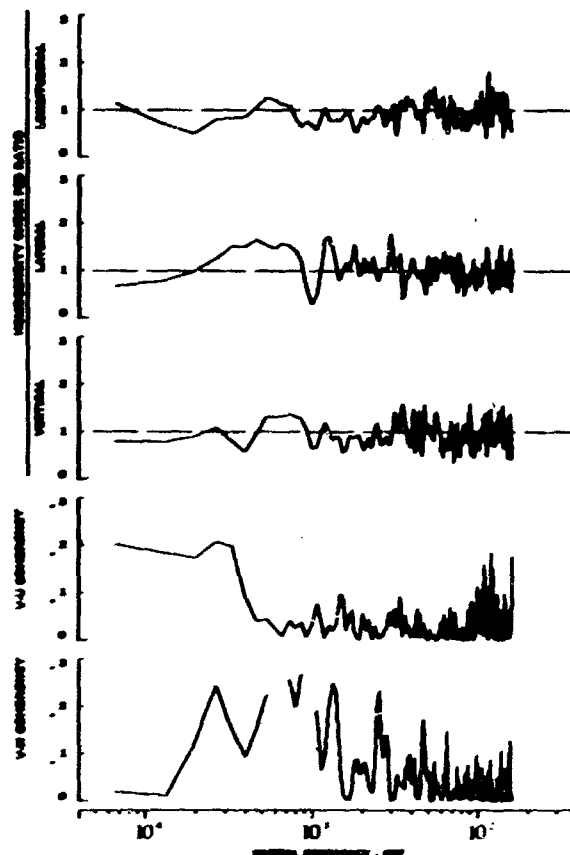
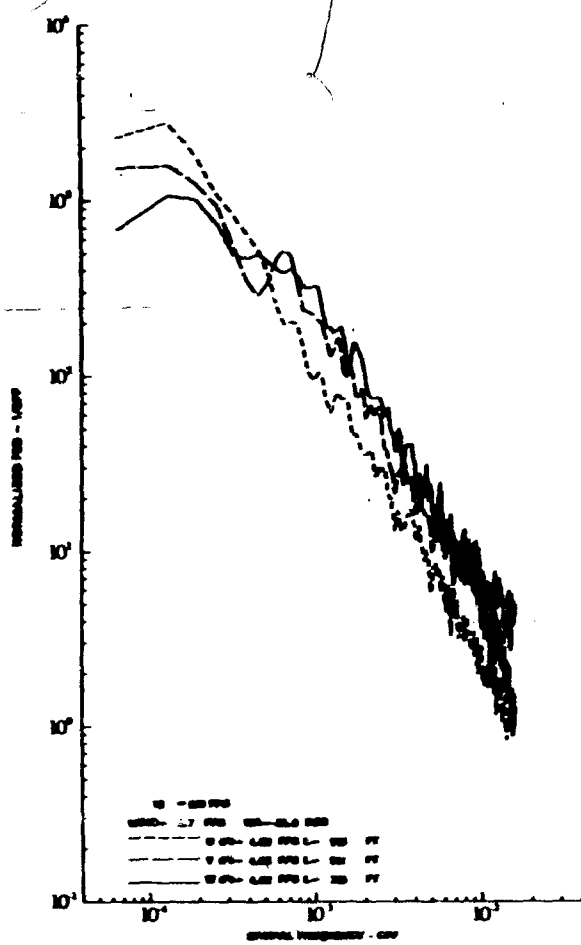
Turbulence Spectra Data For Test 287, Log 3, Category 222212



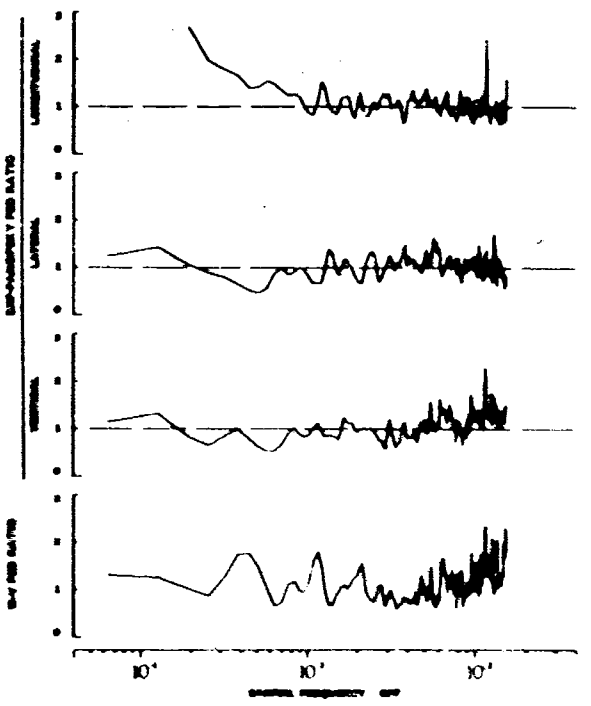
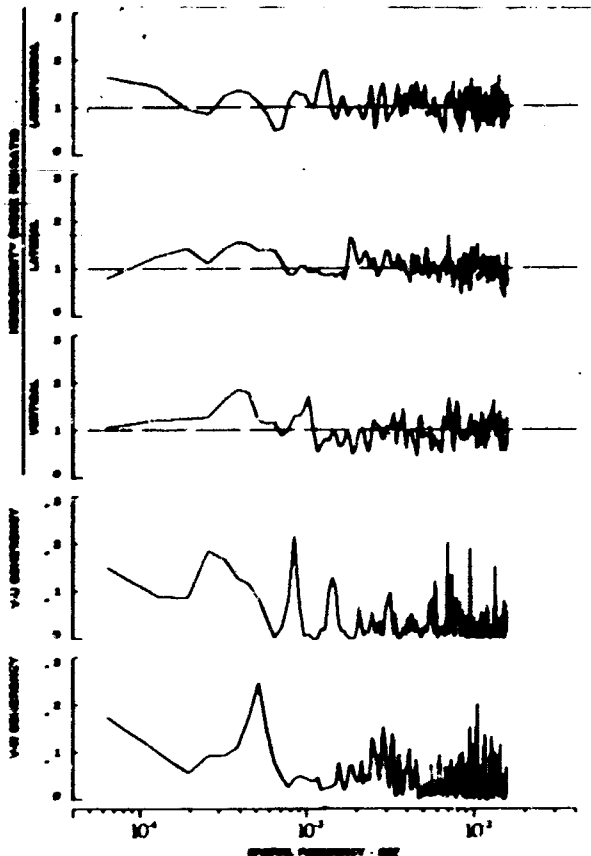
Turbulence Spectra Data For Test 267, Leg 5, Category 223212

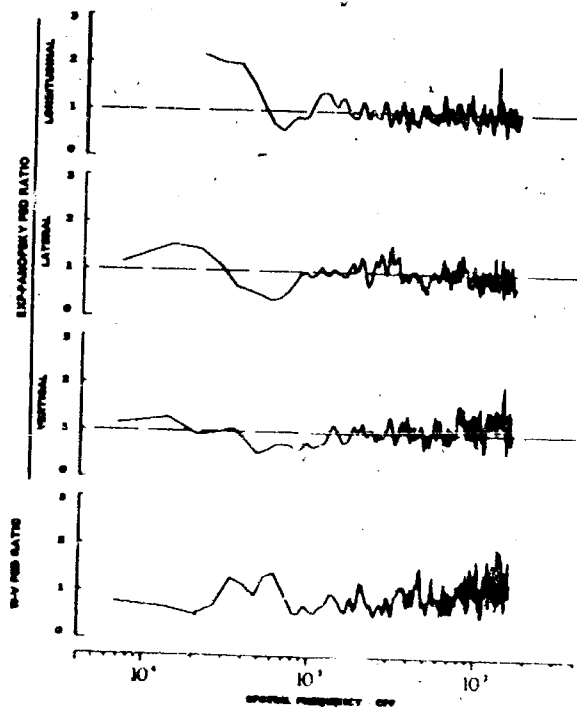
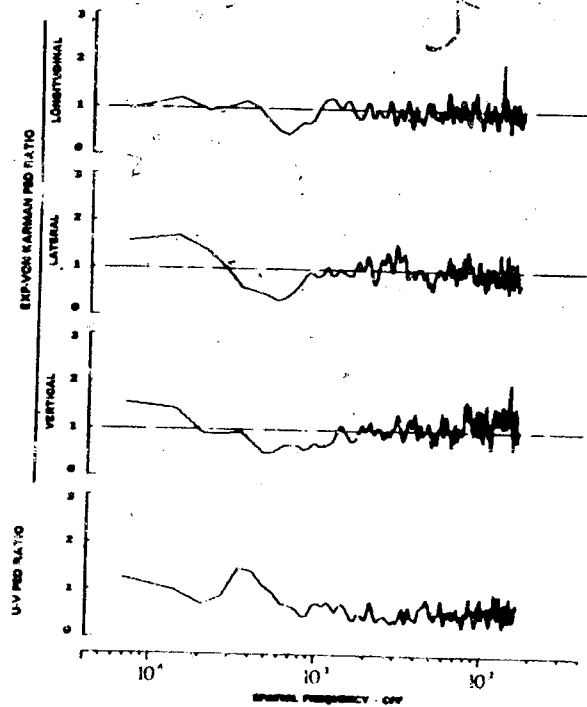
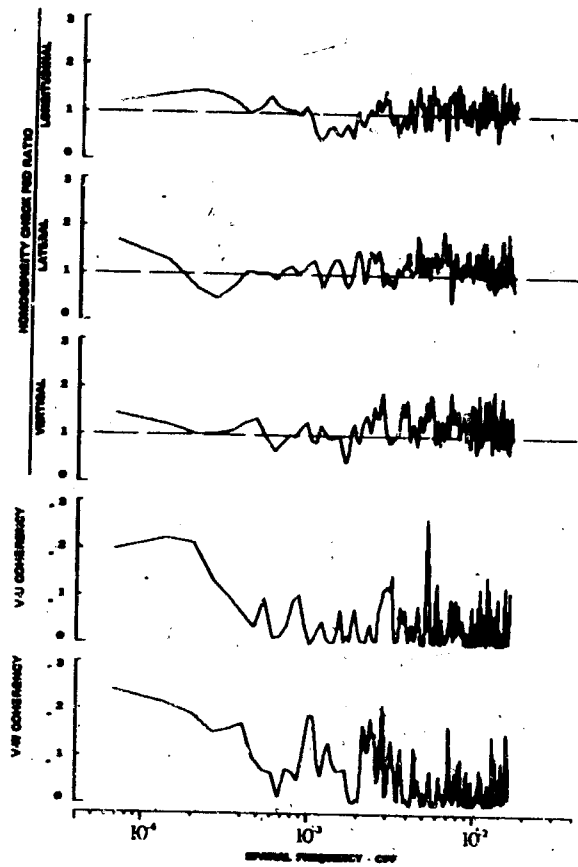
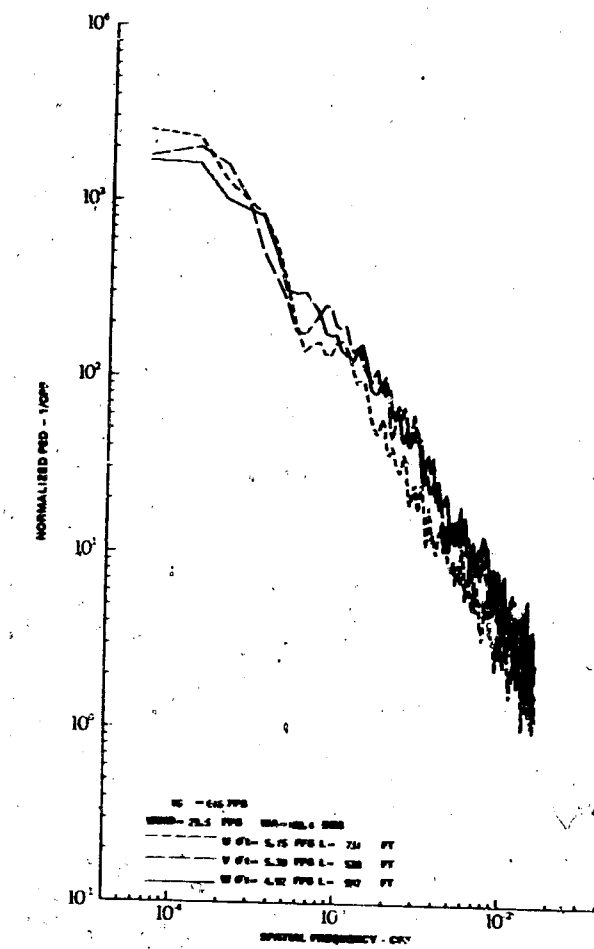


Turbulence Spectra Data For Test 287, Leg 7, Category 424212



Turbulence Spectra Data For Test 288, Log 2, Category 223312

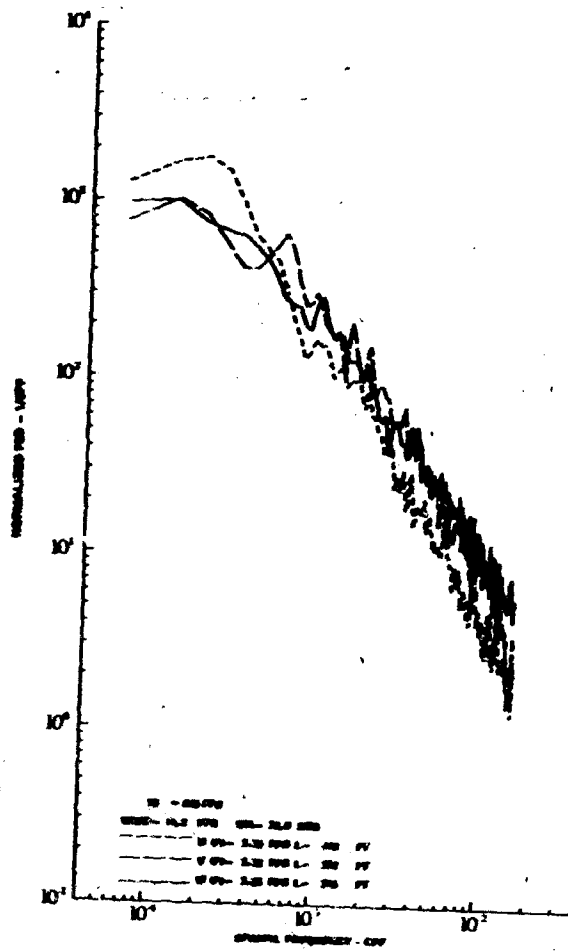


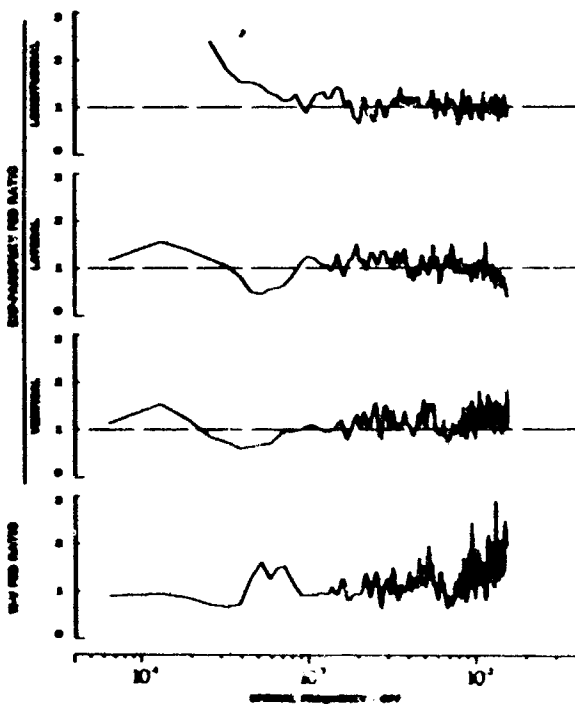
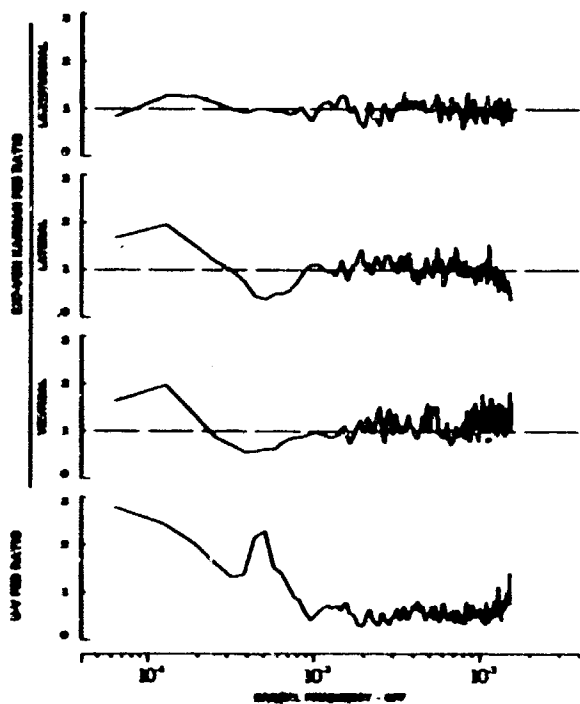
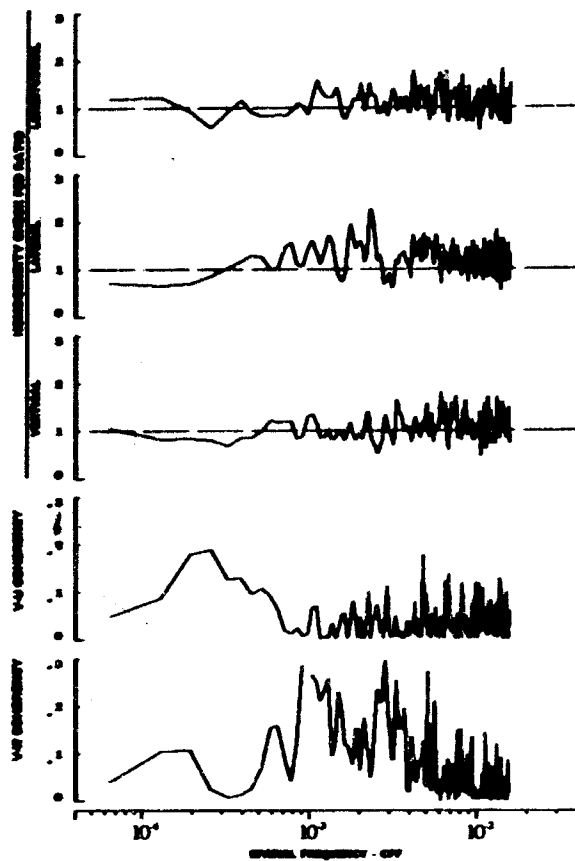
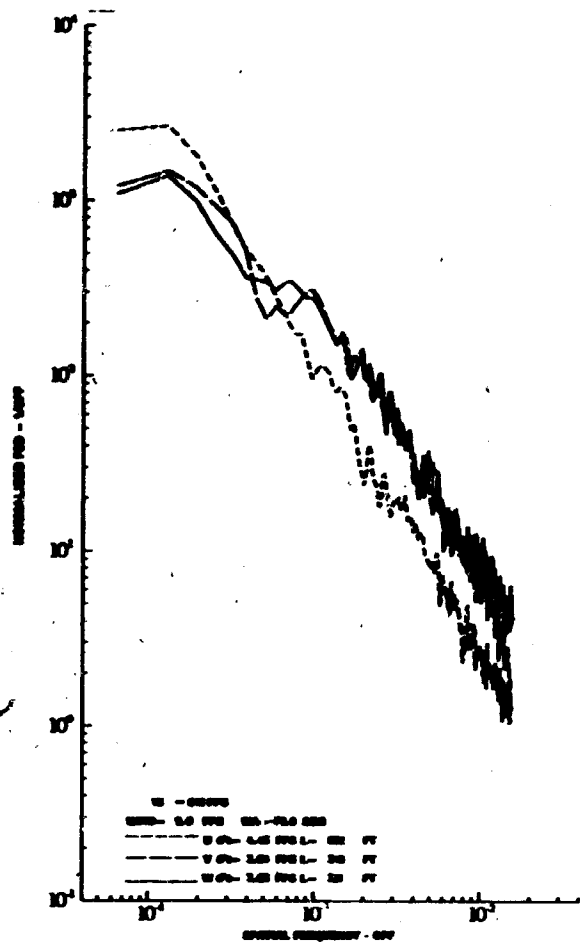


Turbulence Spectra Data For Test 288, Leg 6, Category 224312



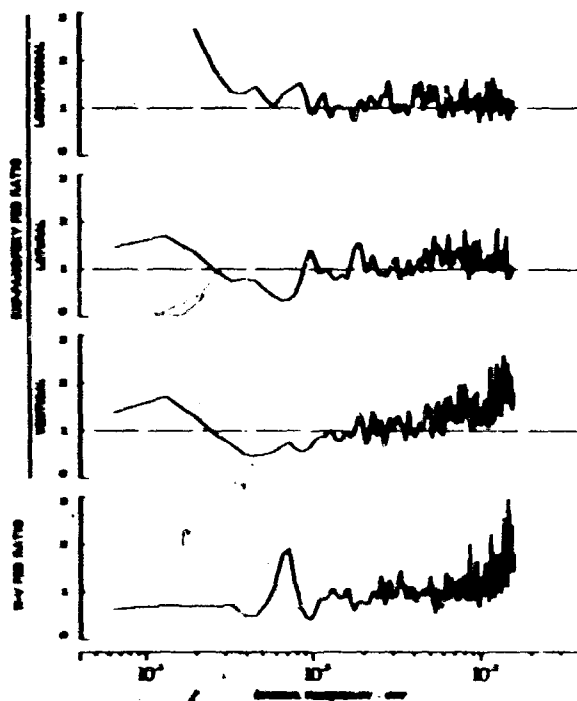
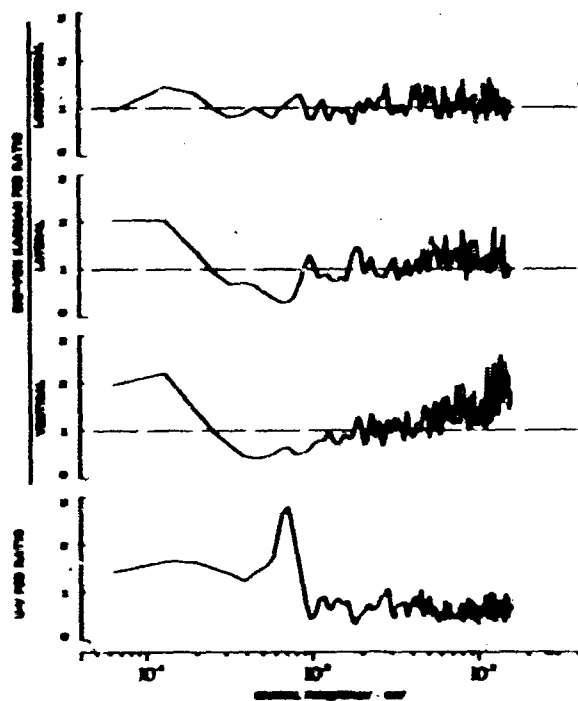
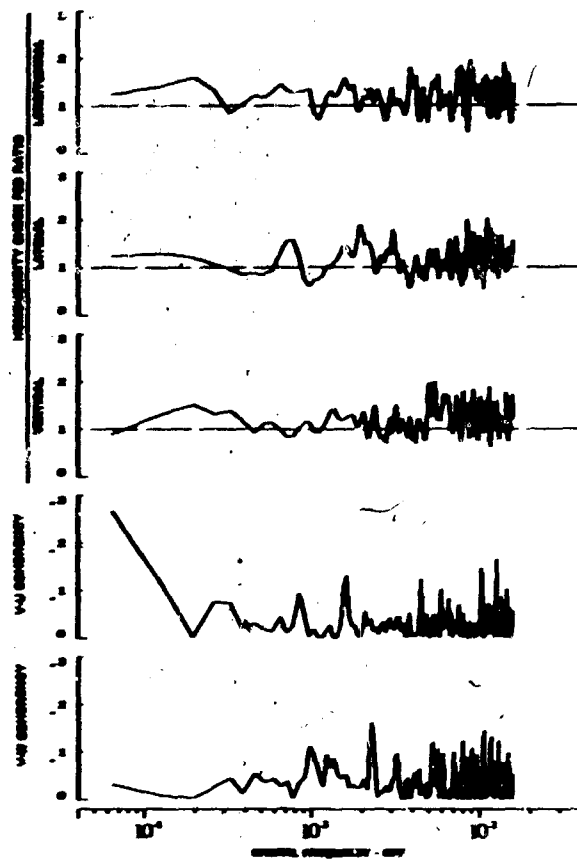
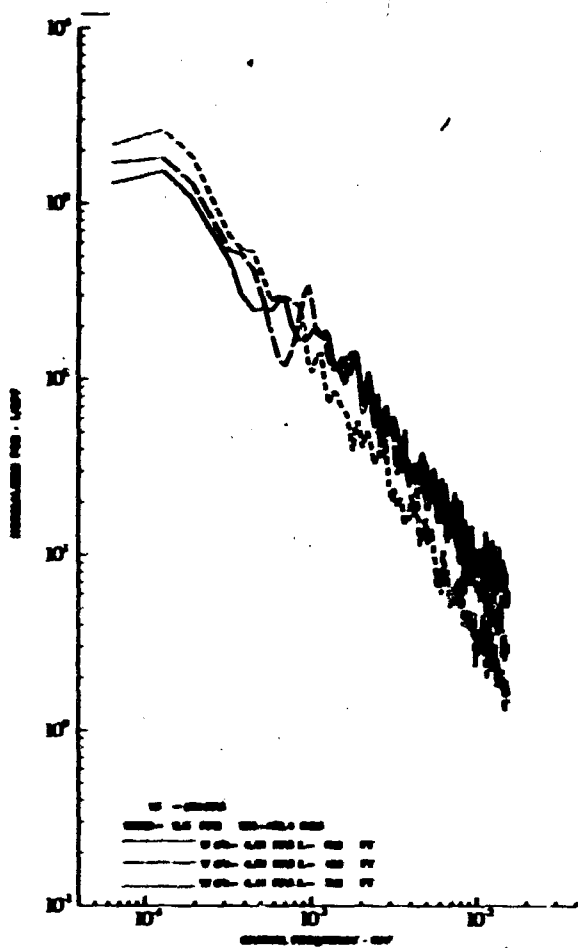






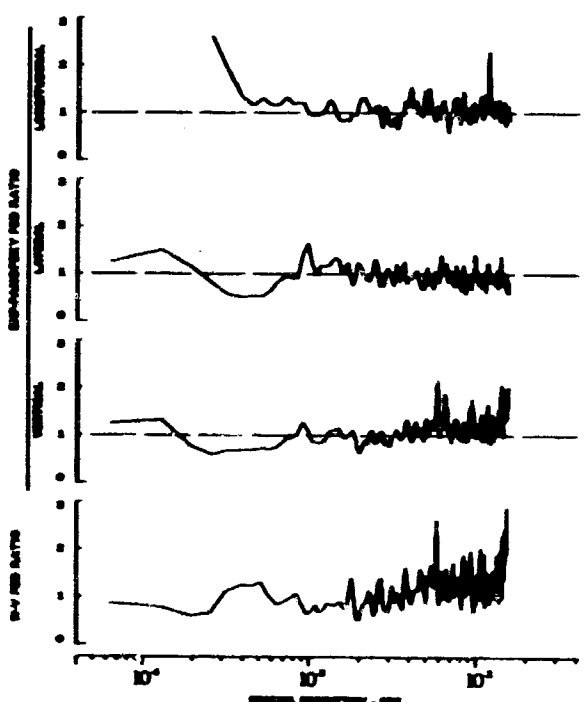
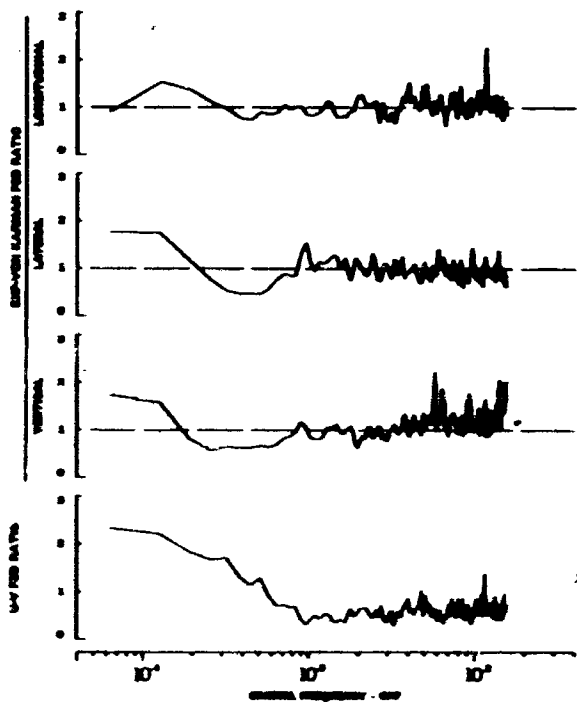
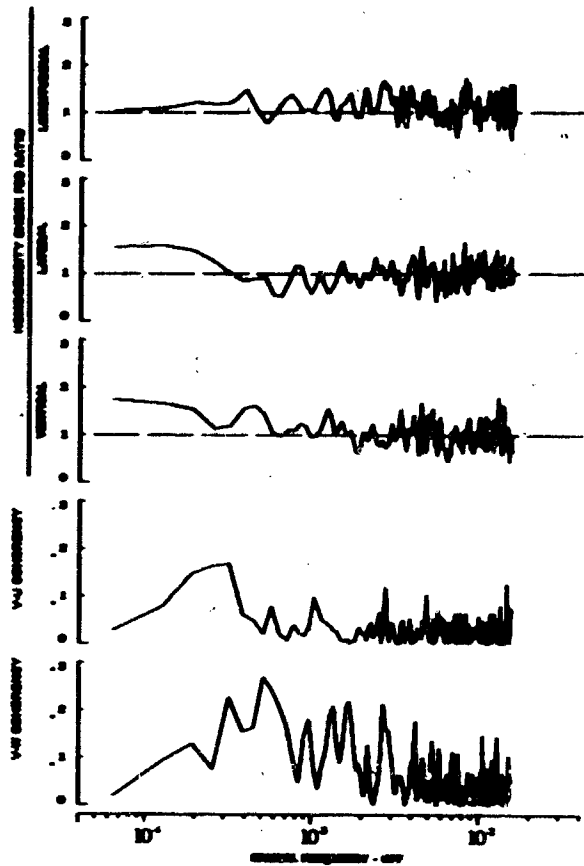
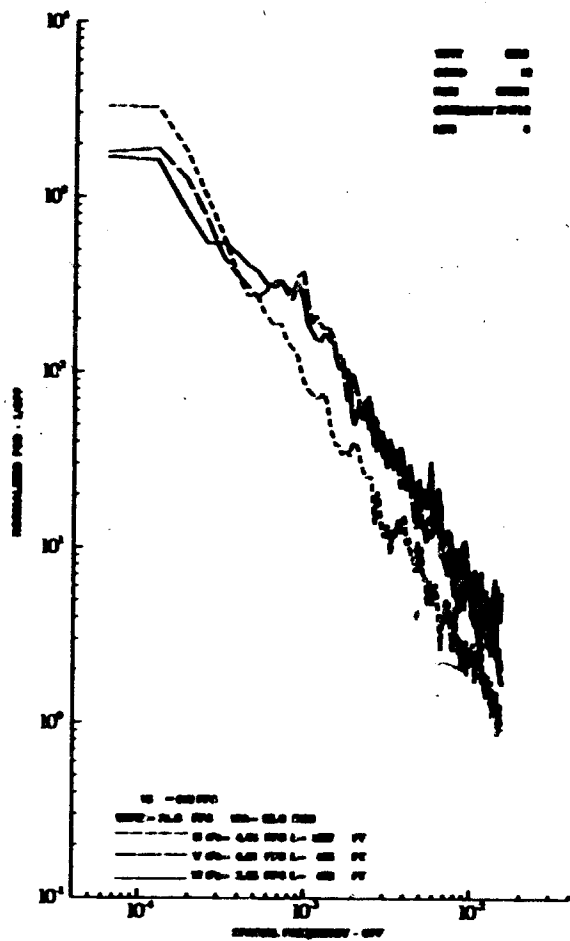
Turbulence Spectra Data For Test 291, Log 3, Category 213212



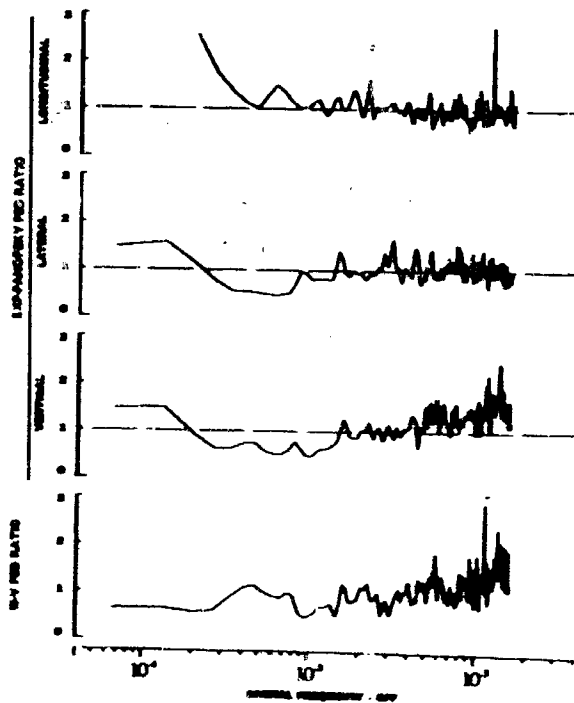
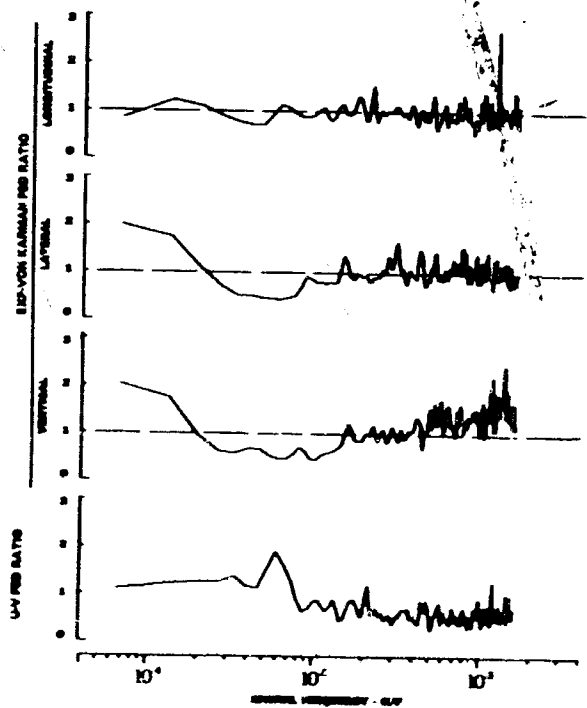
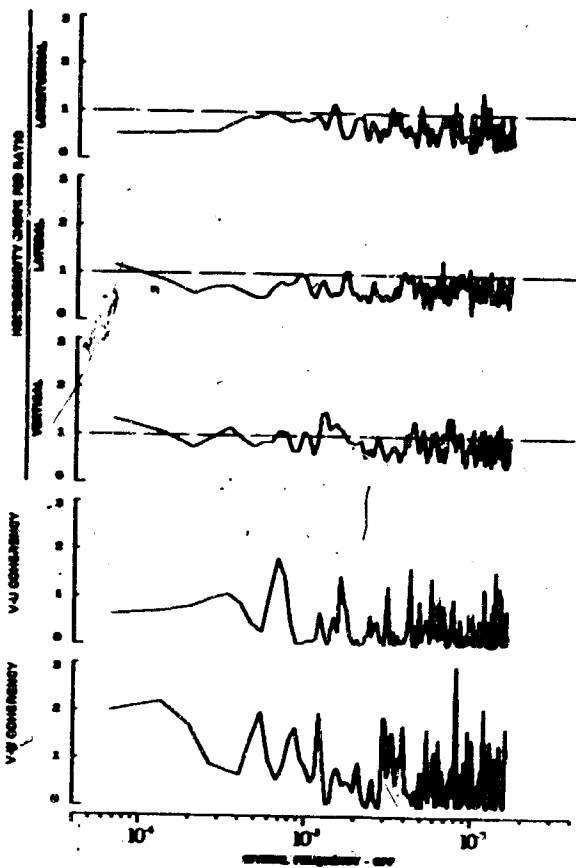
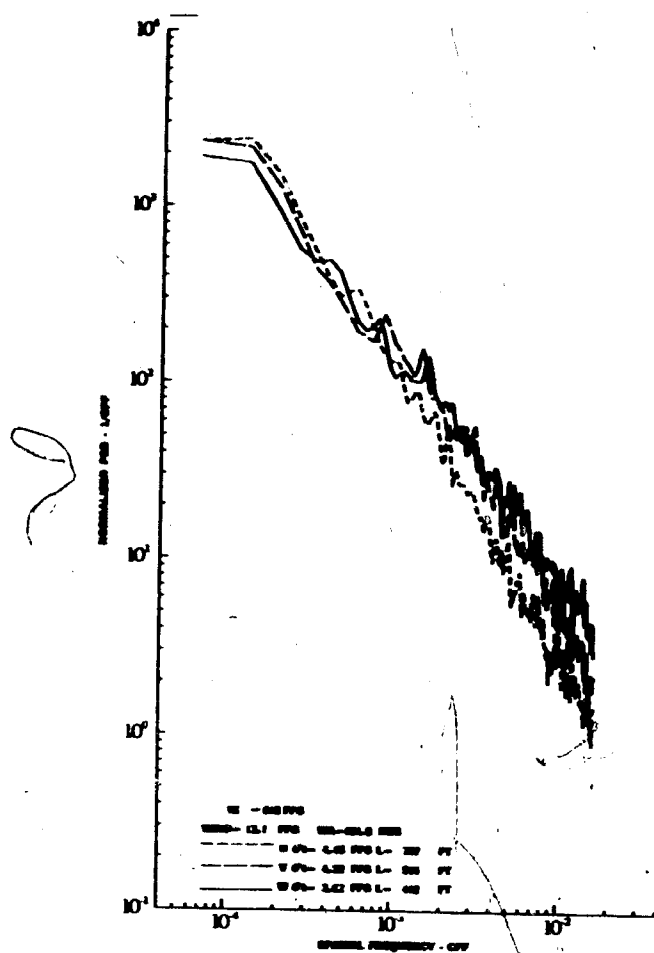


Turbulence Spectra Data For Test 291, Log 7, Category 413212

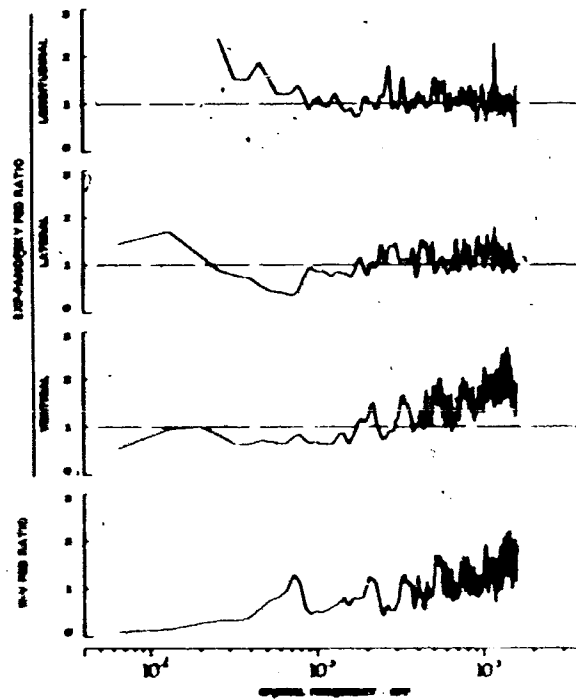
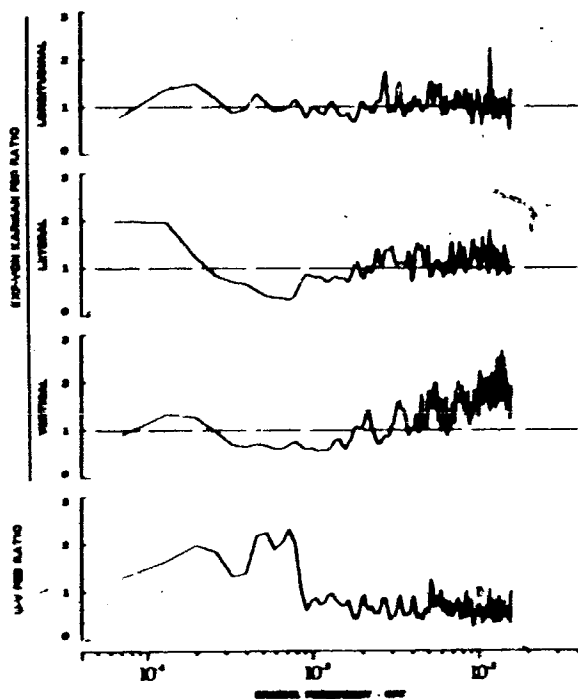
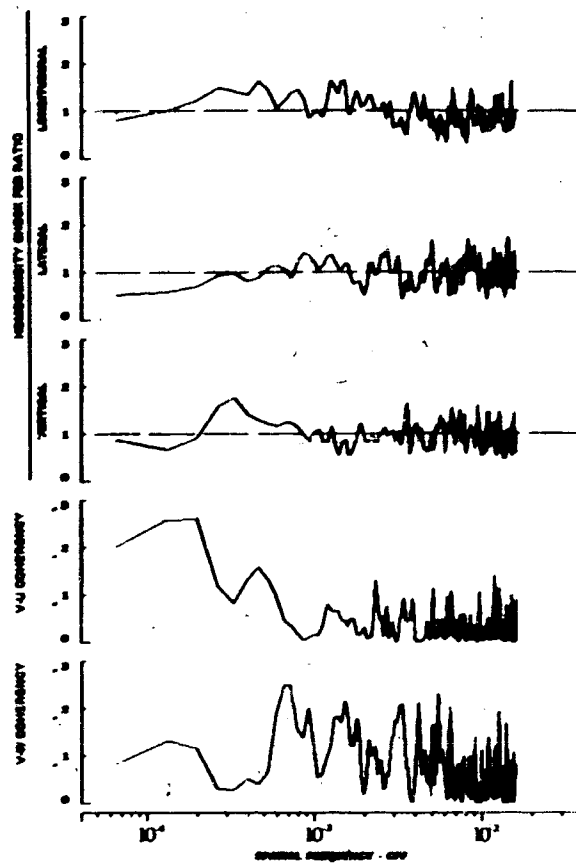
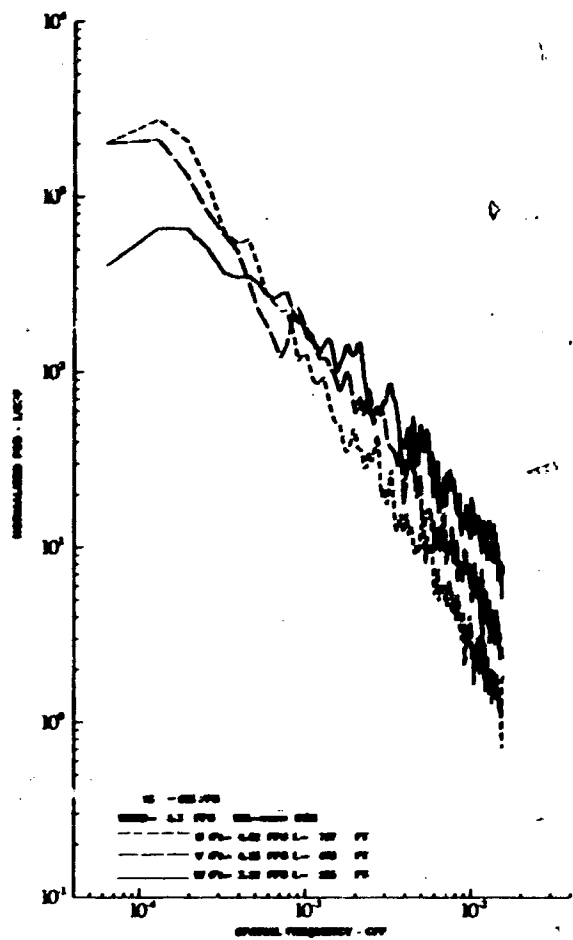




Turbulence Spectra Data For Test 292, Log 4, Category 214312

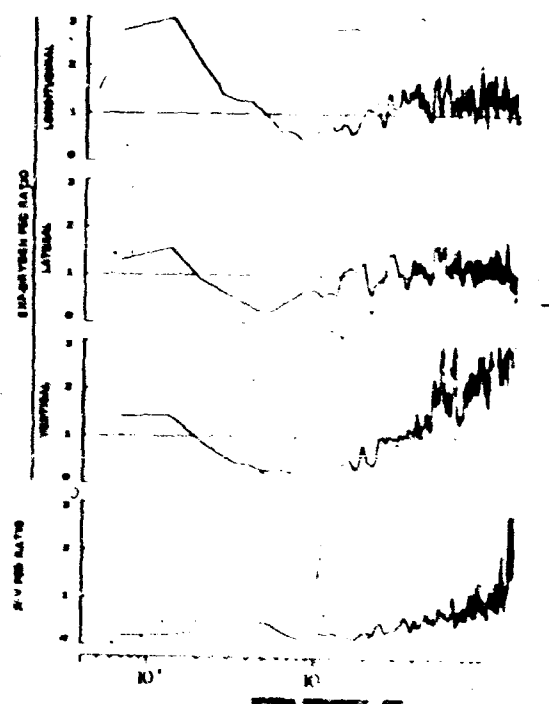
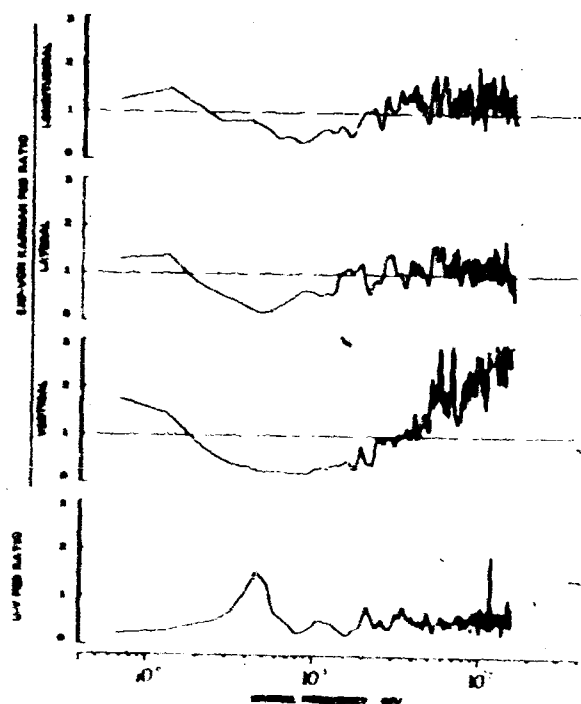
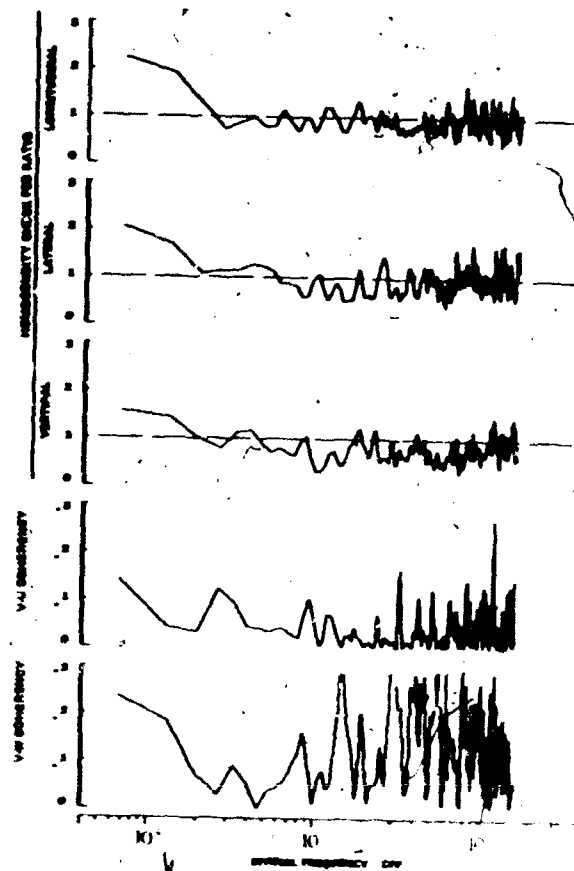


Turbulence Spectra Data For Test 292, Log 6, Category 213312



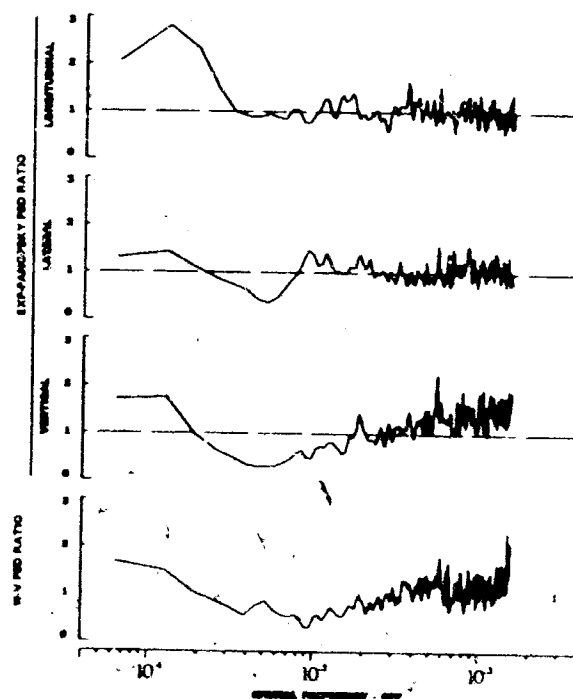
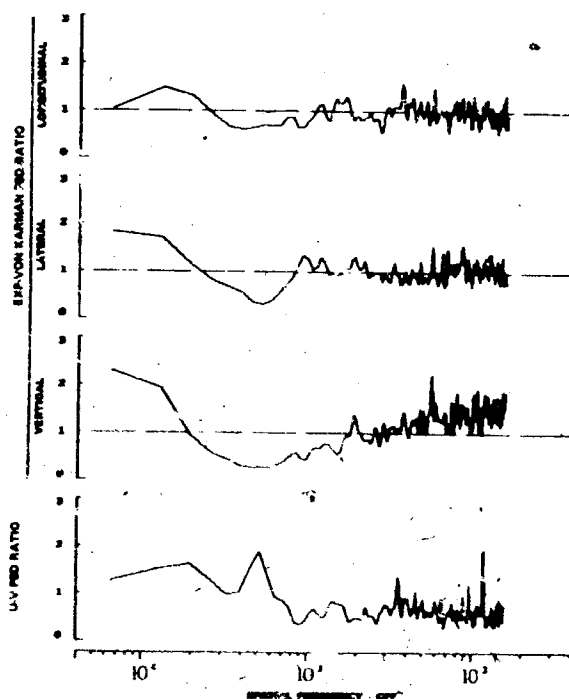
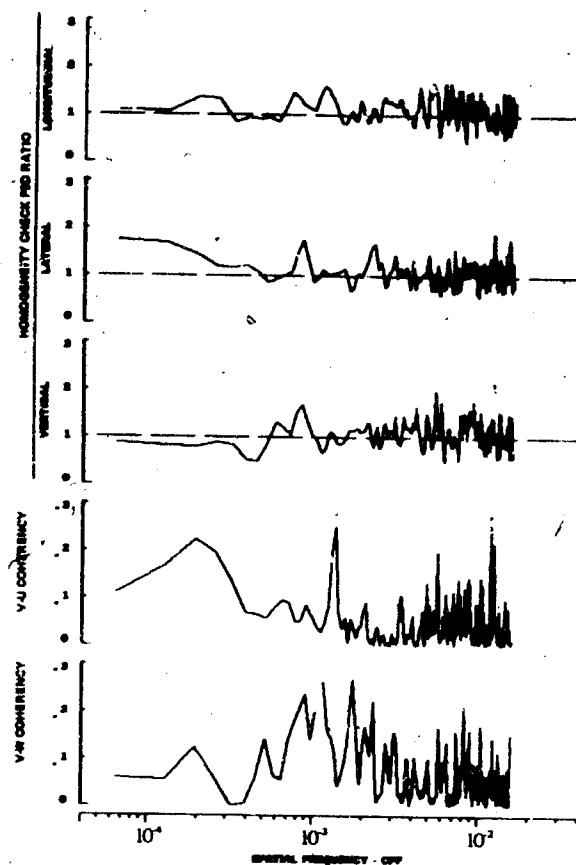
Turbulence Spectra Data For Test 292, Log 8, Category 413312



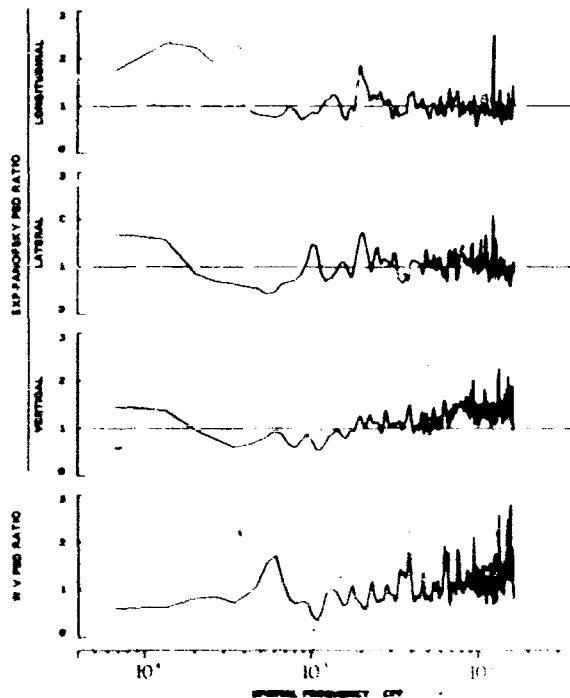
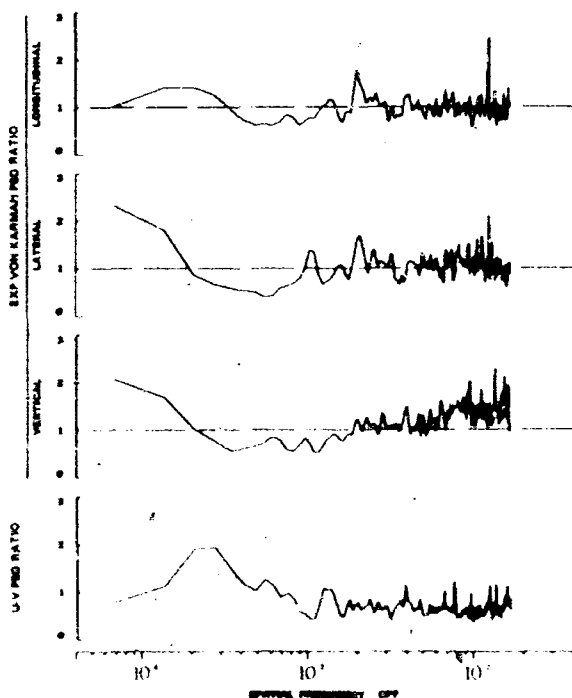
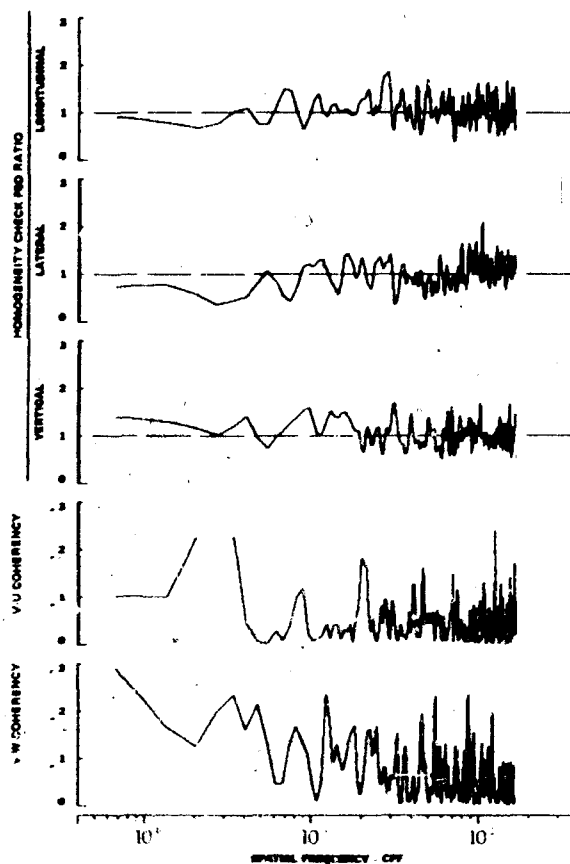
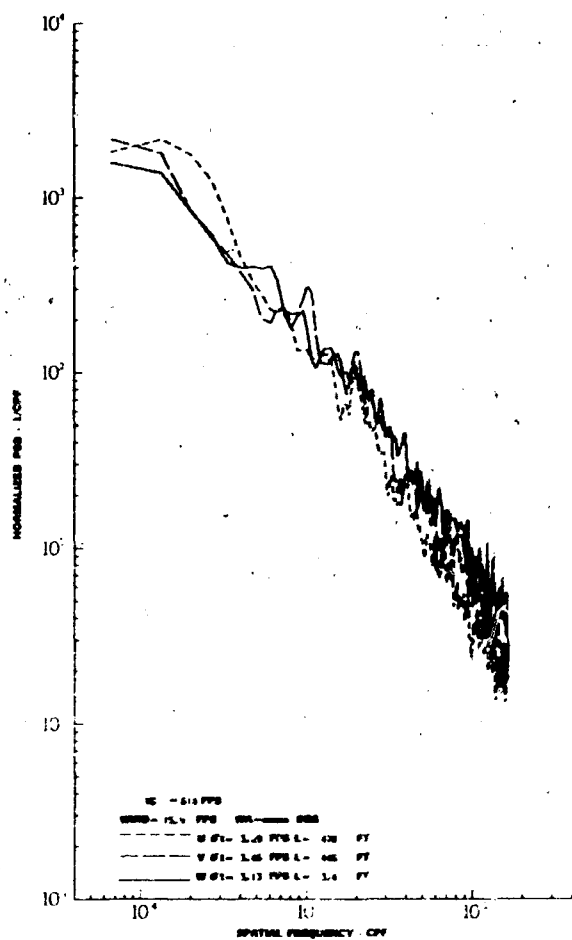


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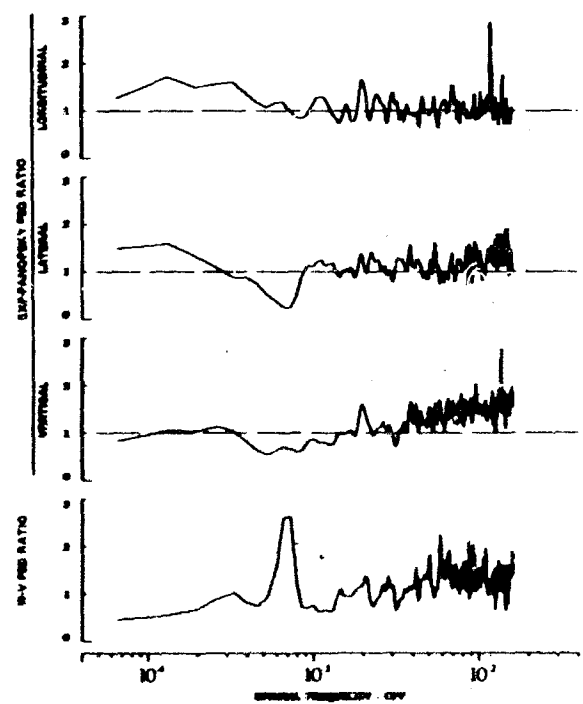
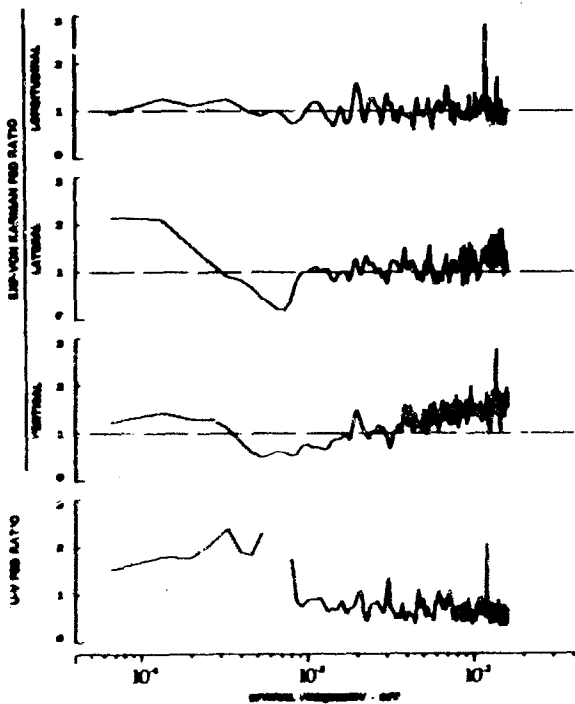
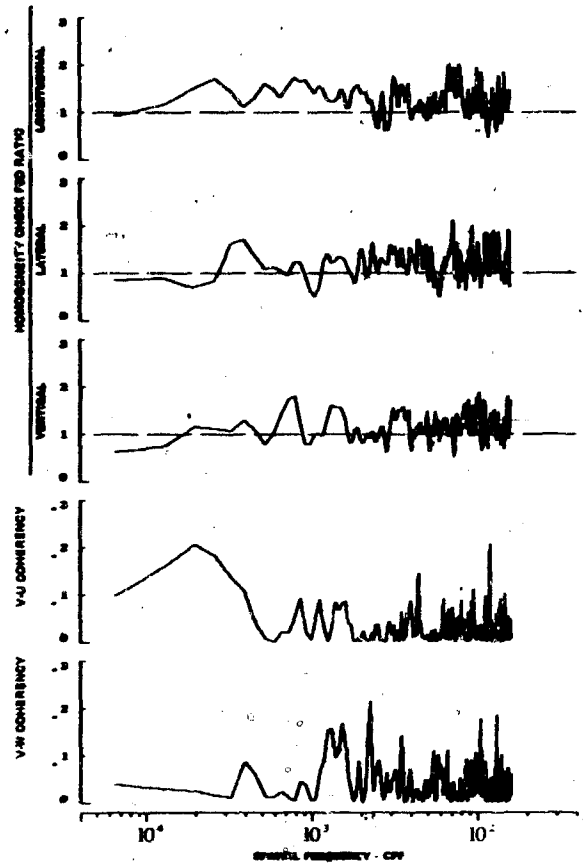
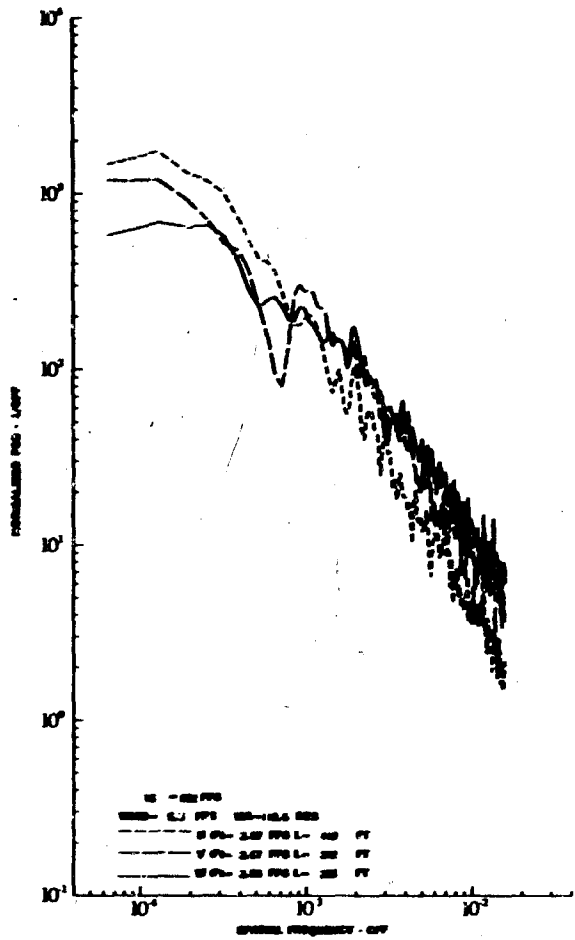




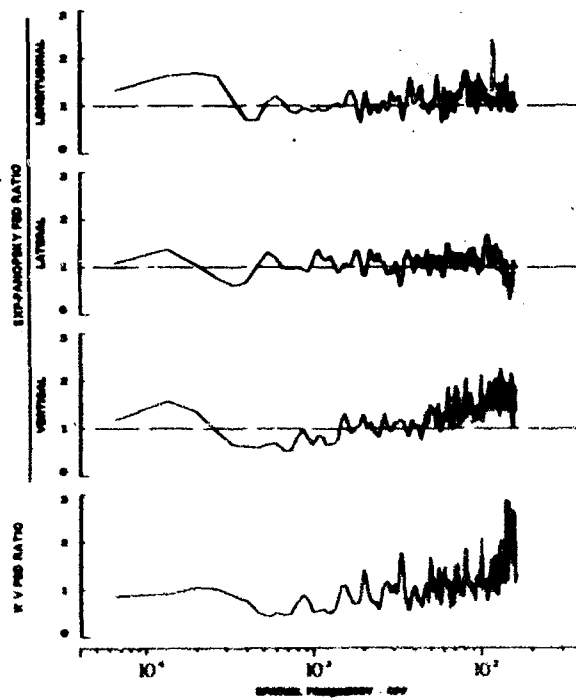
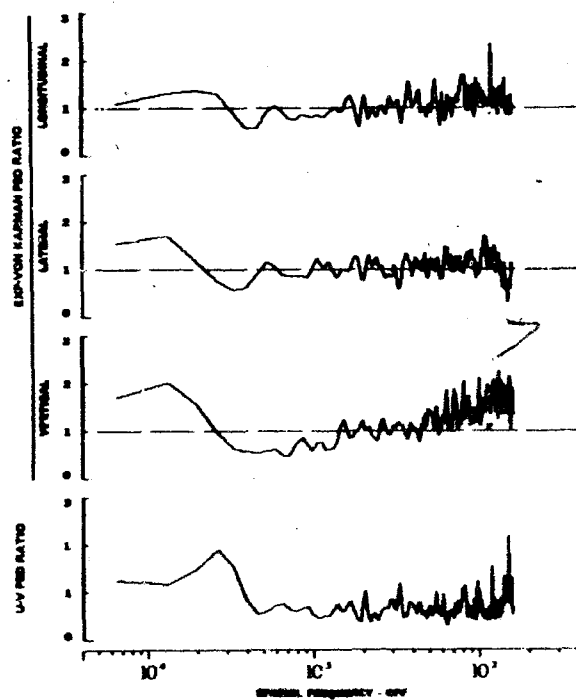
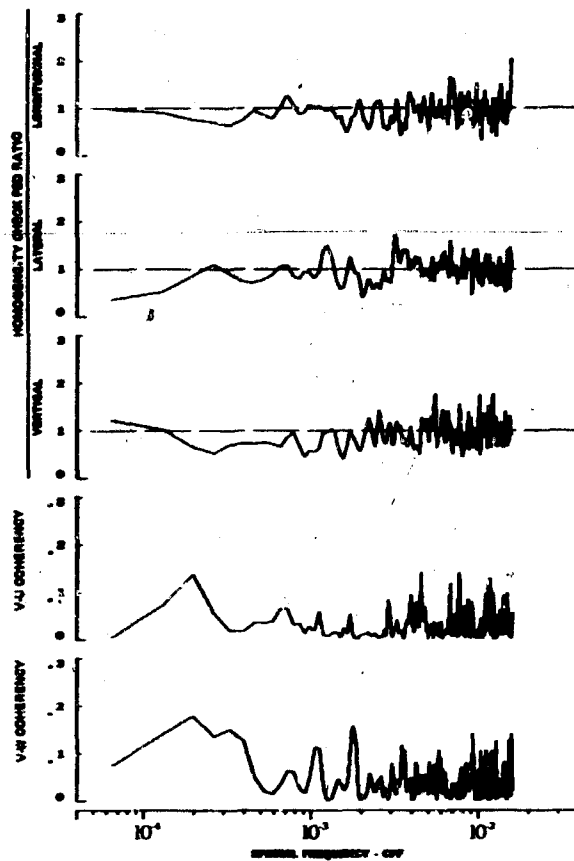
Turbulence Spectra Data For Test 294, Log 4, Category 212212



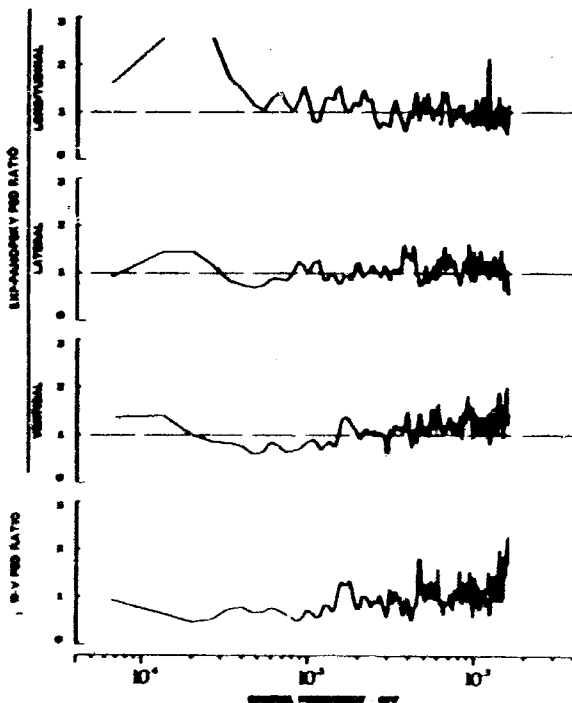
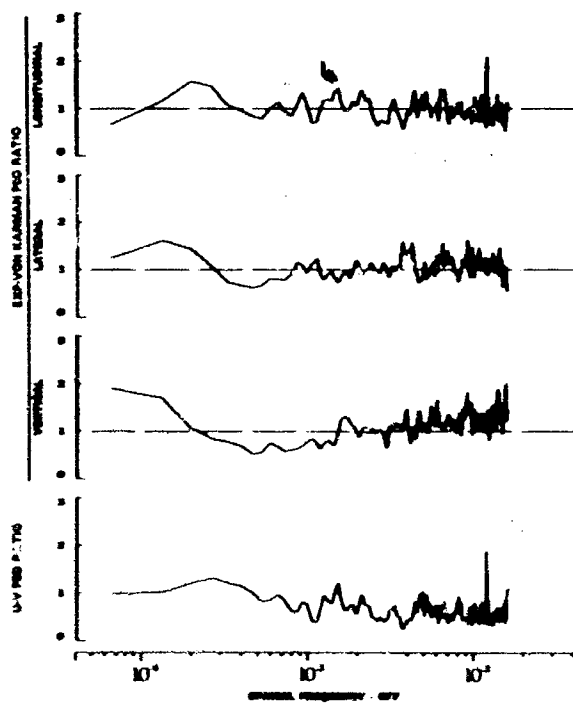
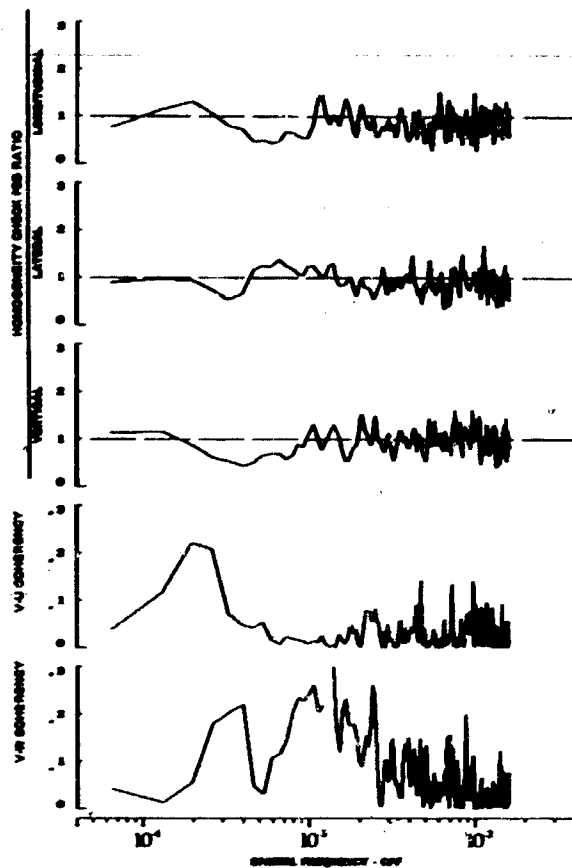
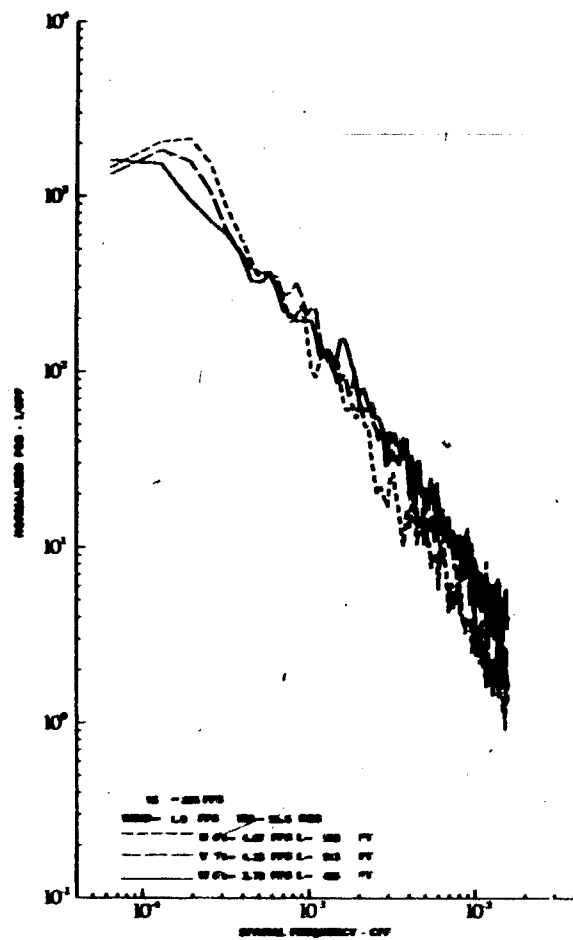
Turbulence Spectra Data For Test 294, Leg 6, Category 213212



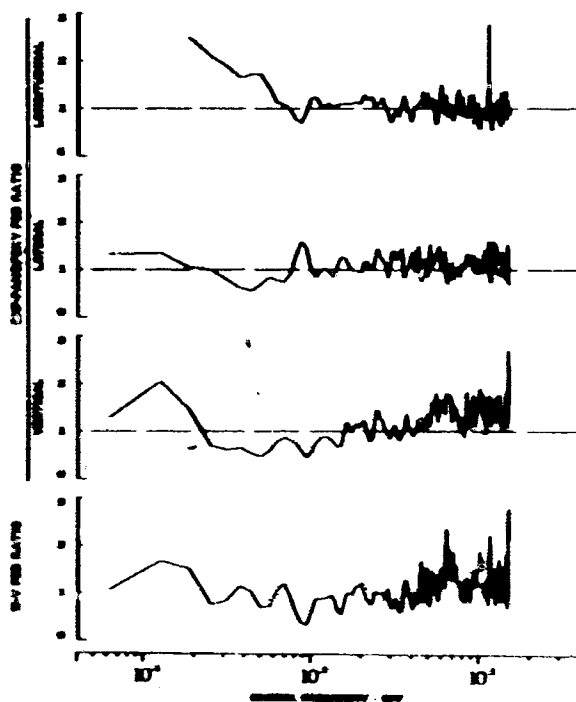
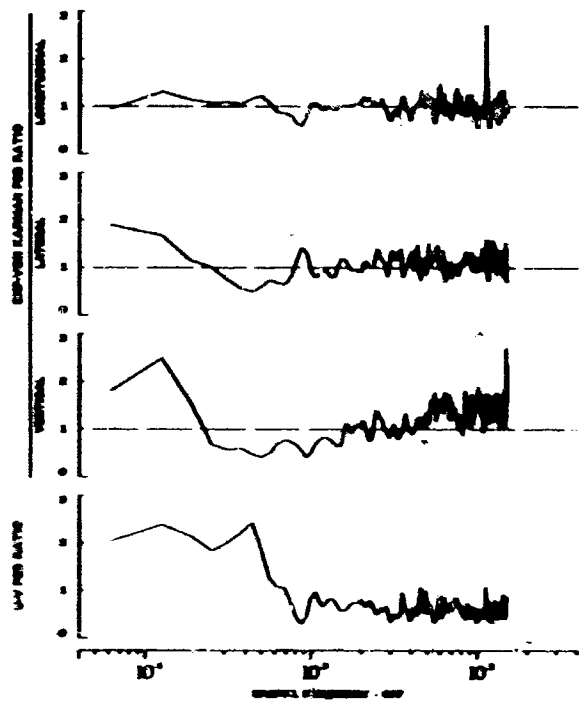
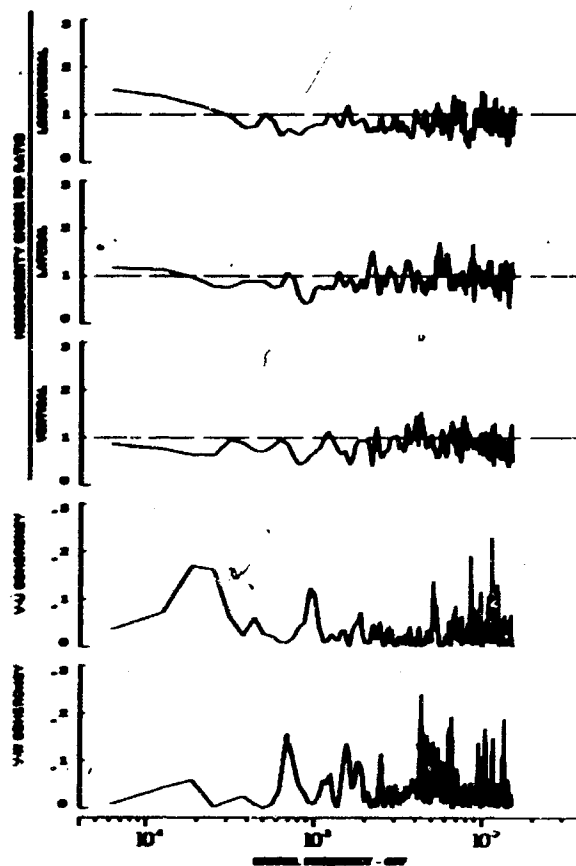
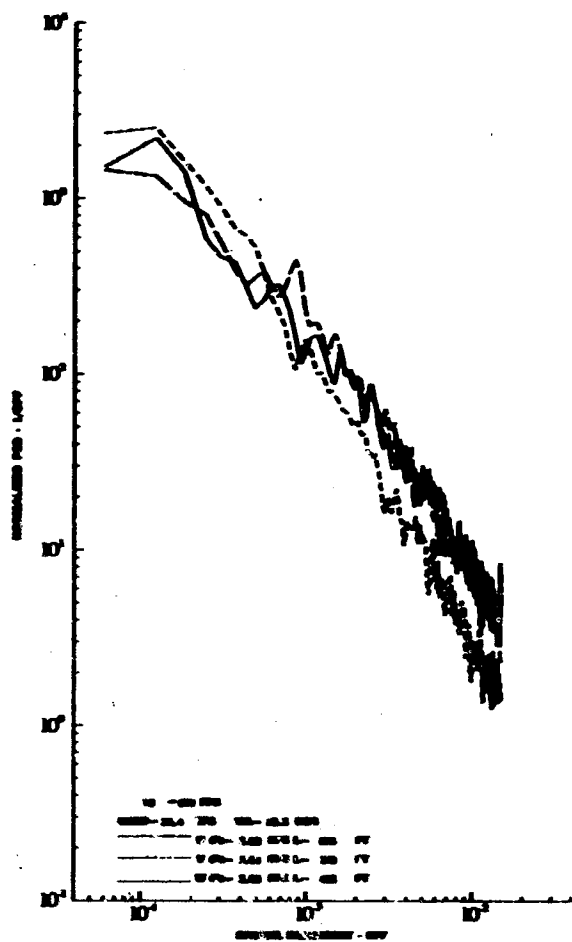
Turbulence Spectra Data For Test 294, Log 8, Category 412212



445

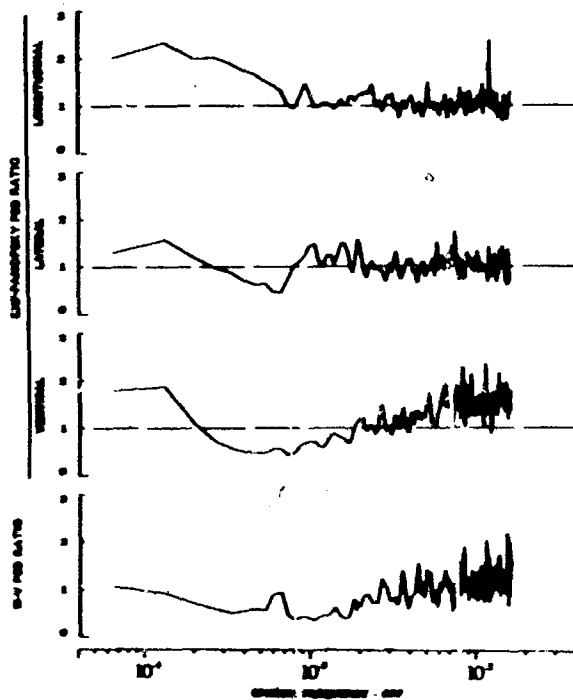
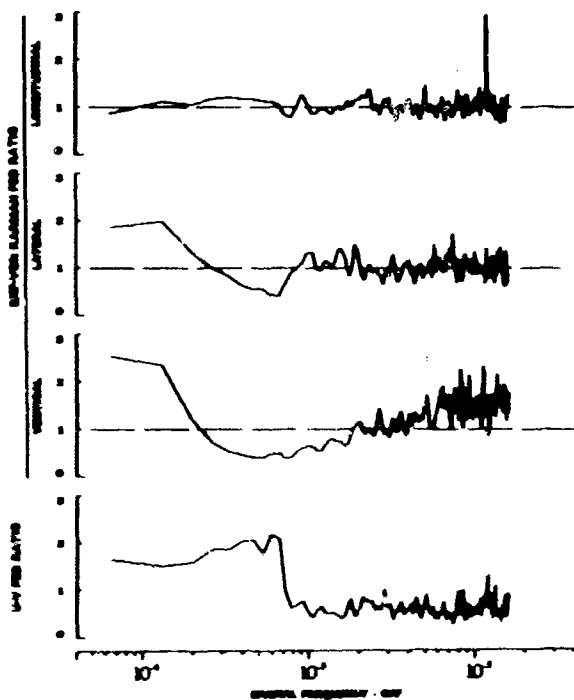
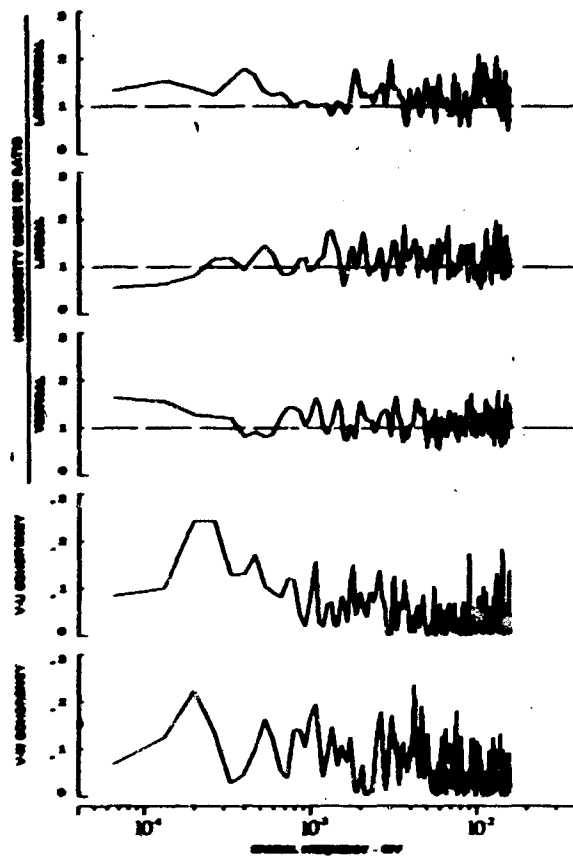
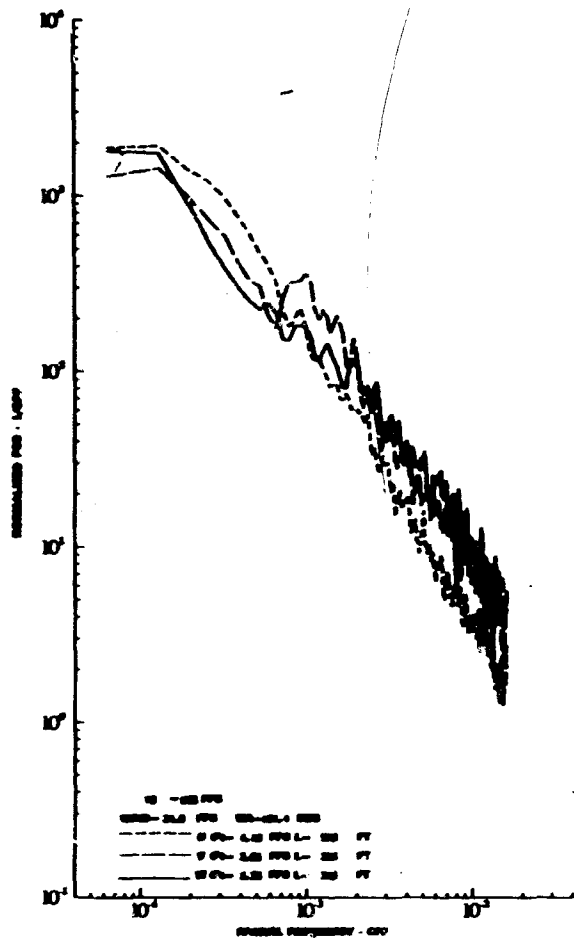


Turbulence Spectra Data For Test 295, Log 3, Category 213312

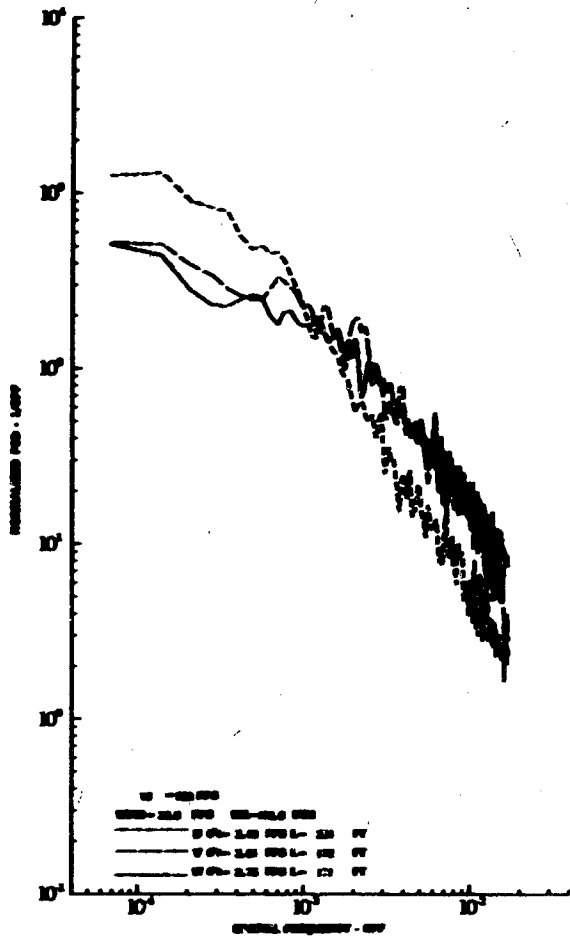


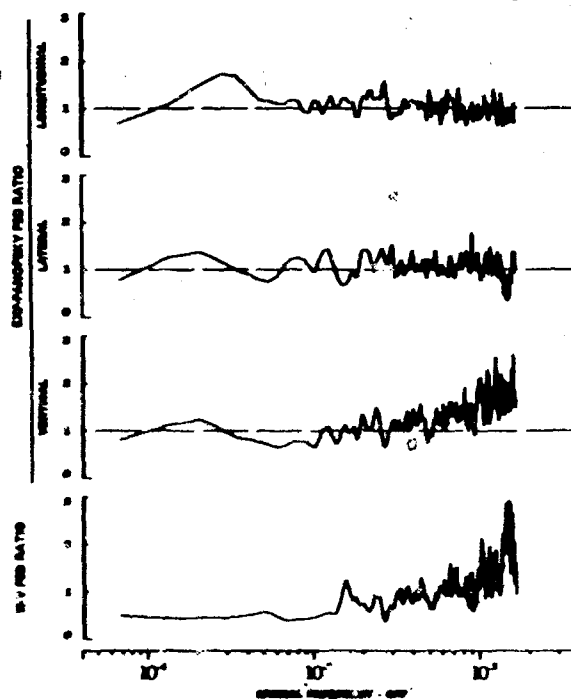
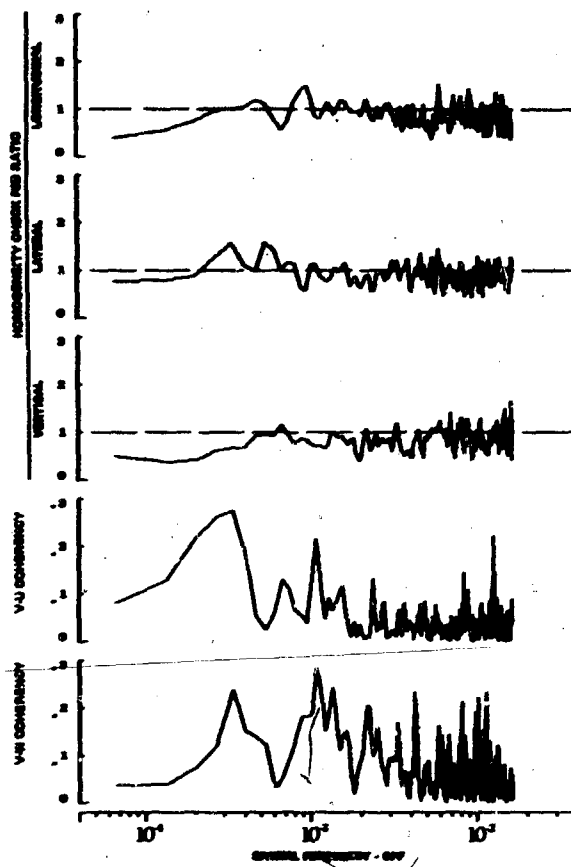
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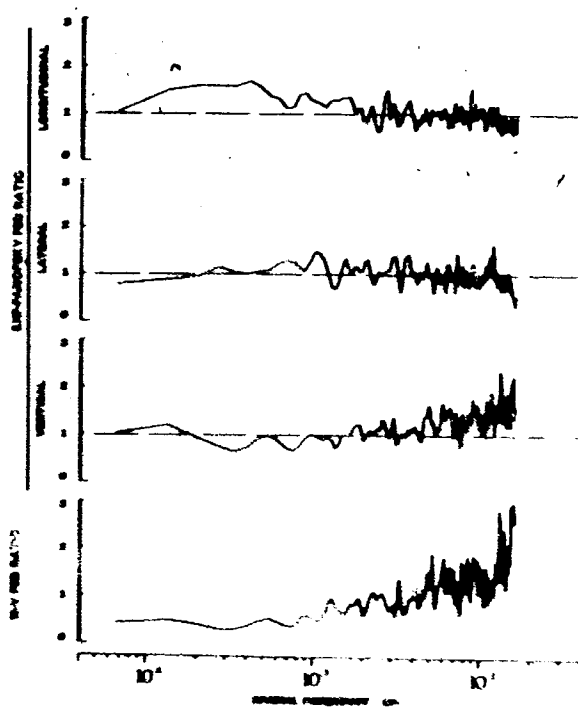
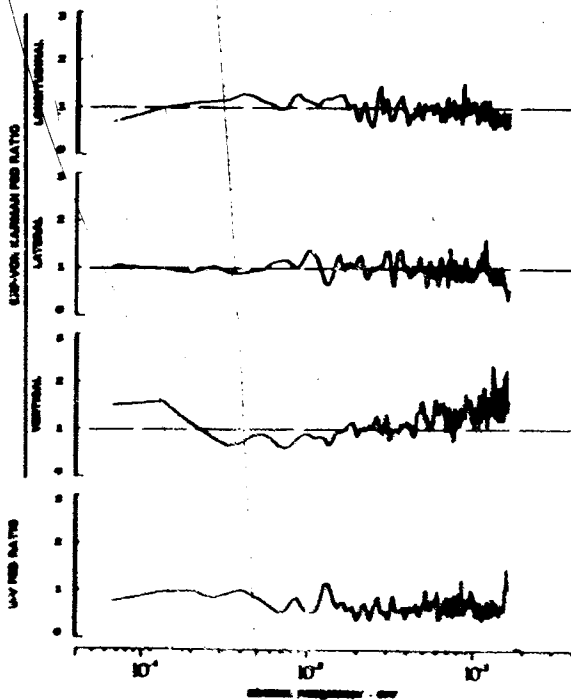
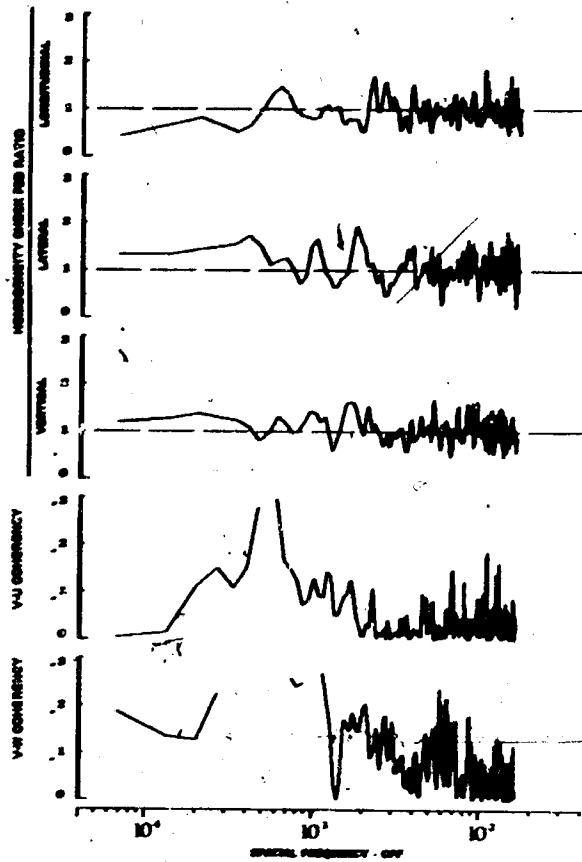
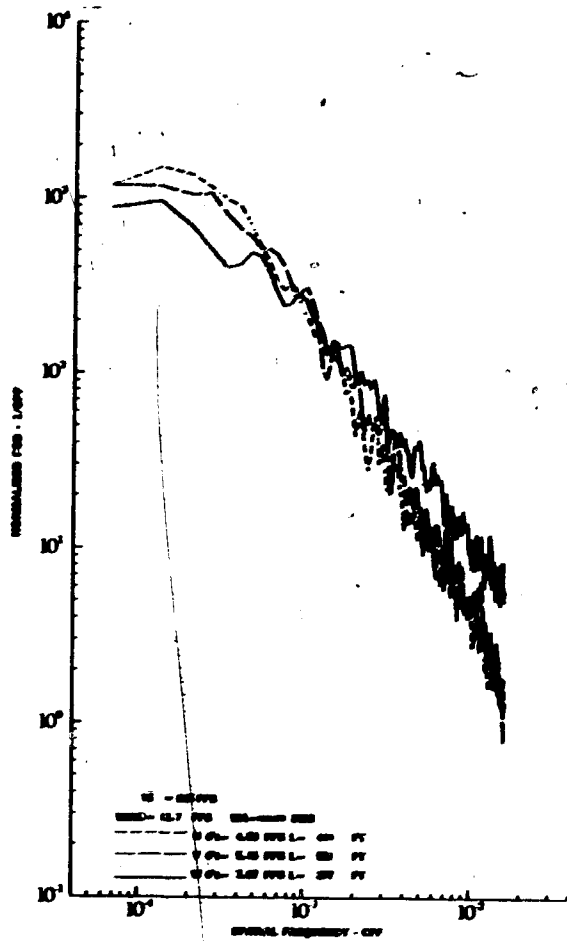




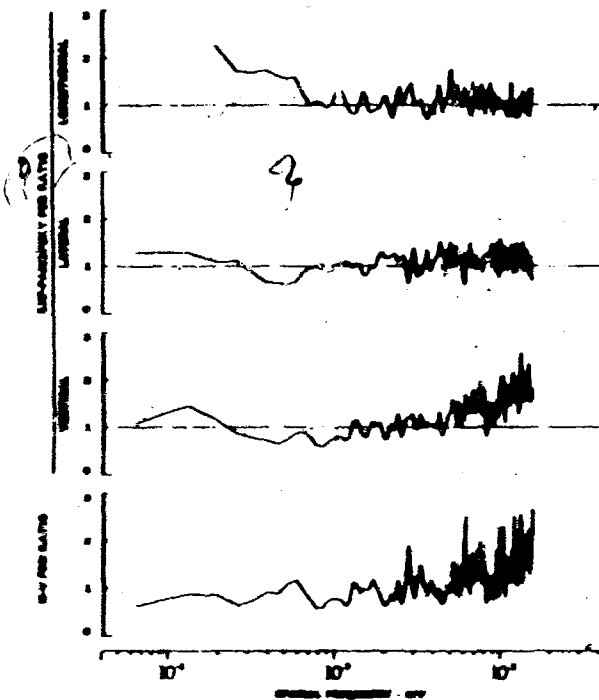
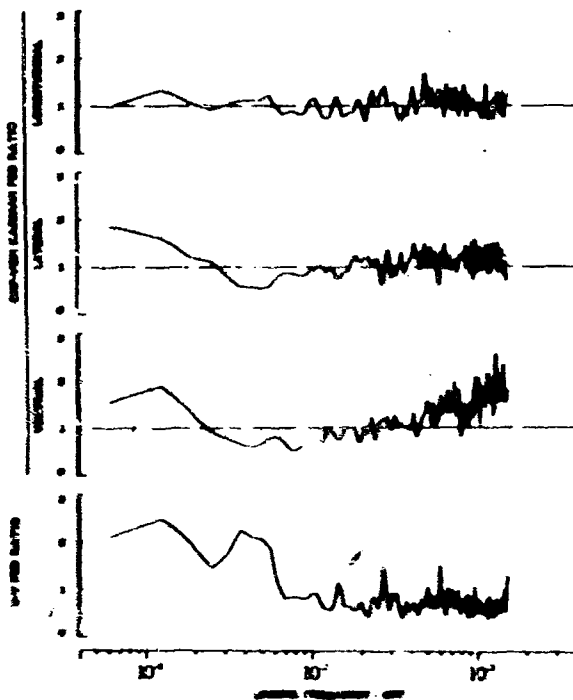
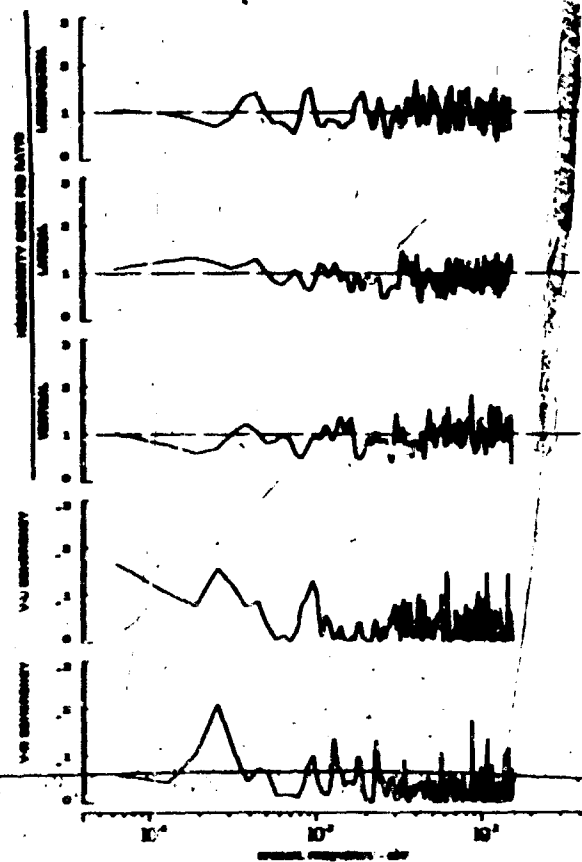
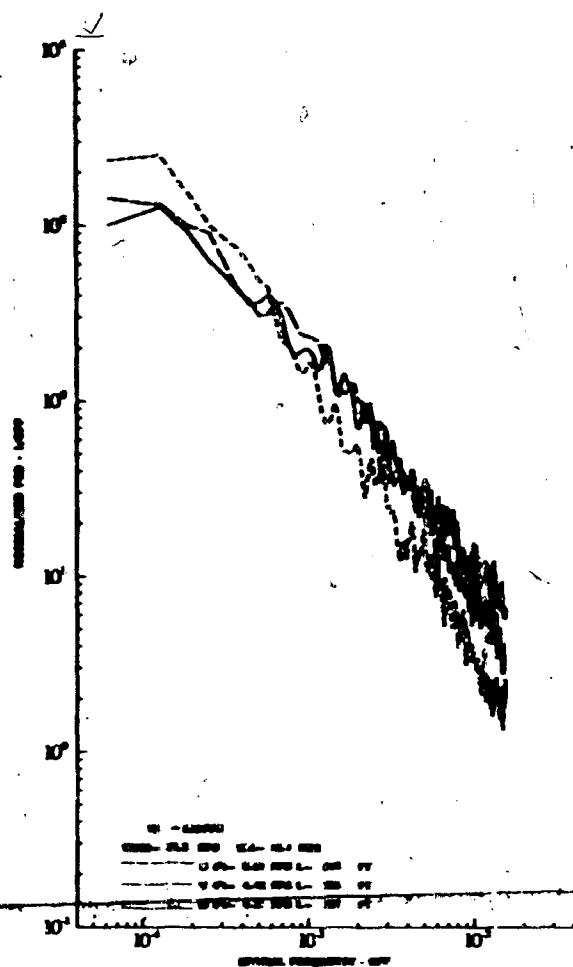
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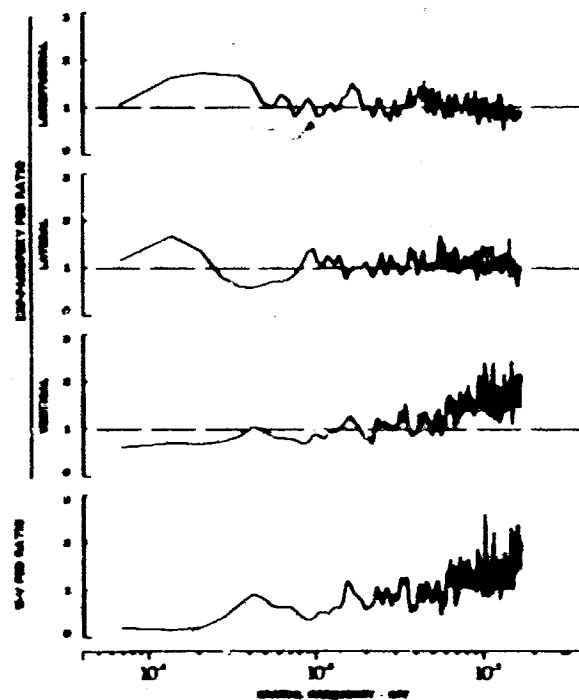
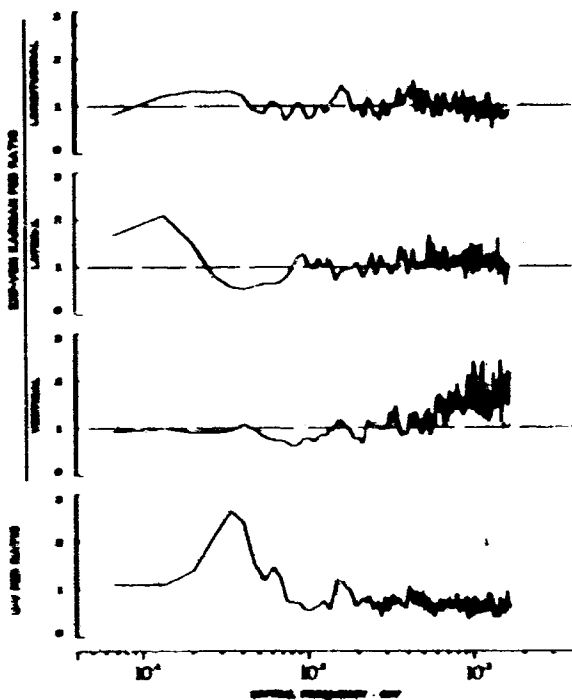
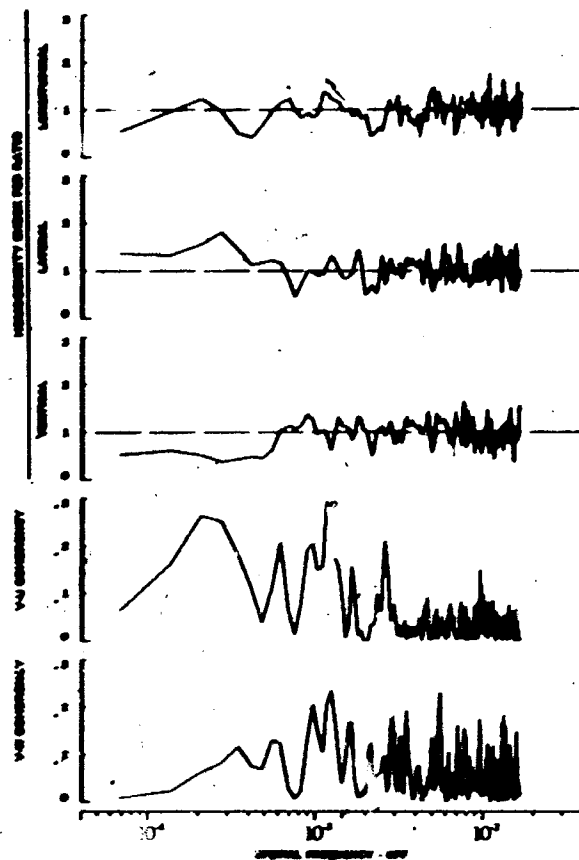
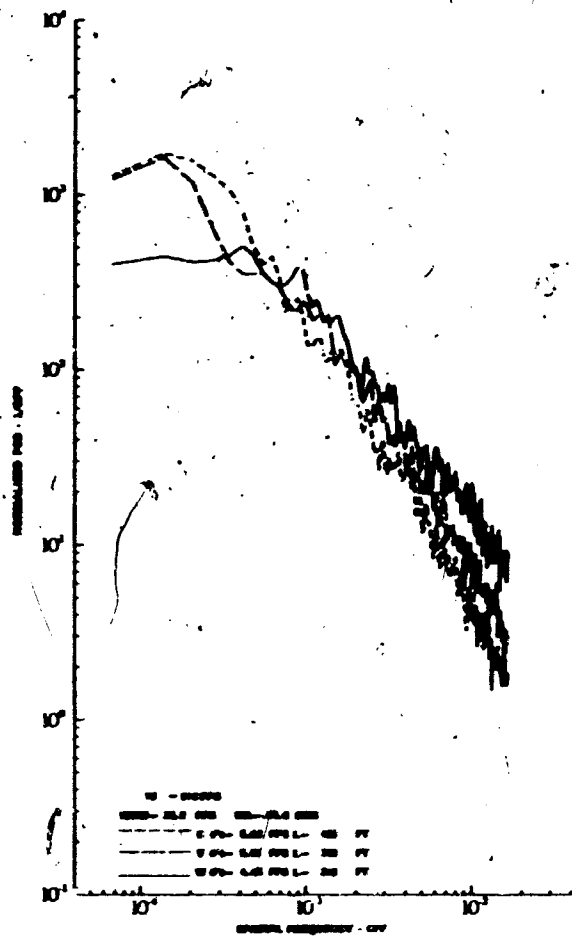




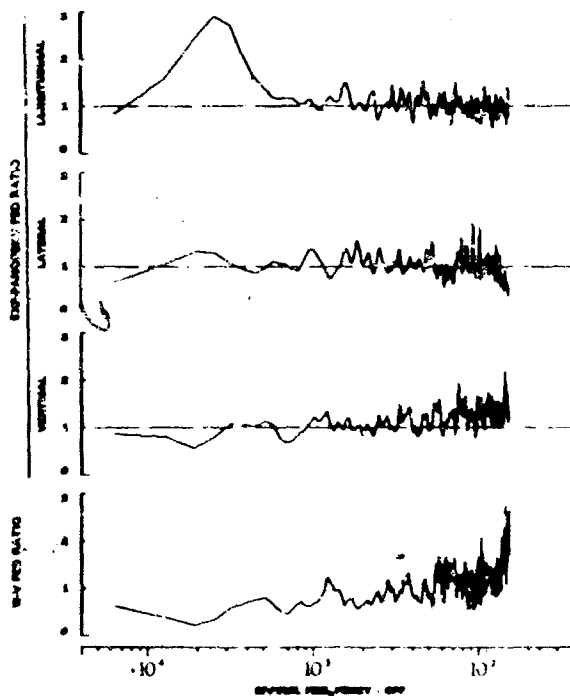
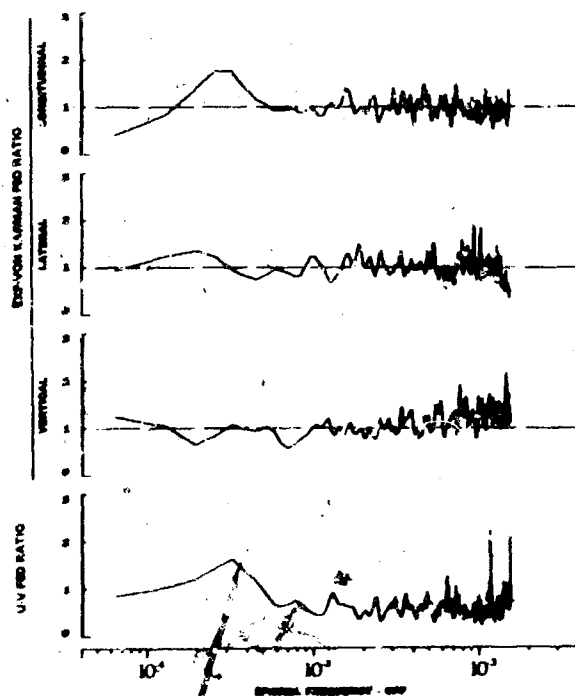
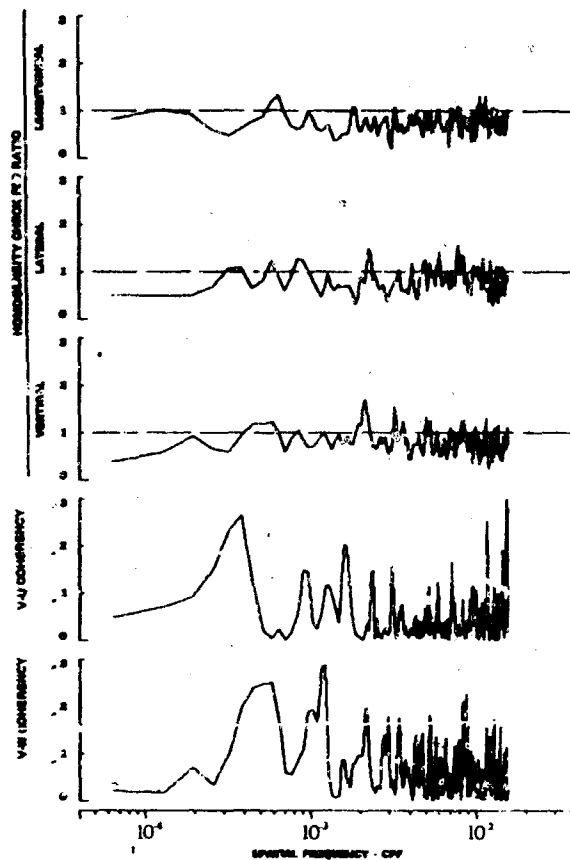
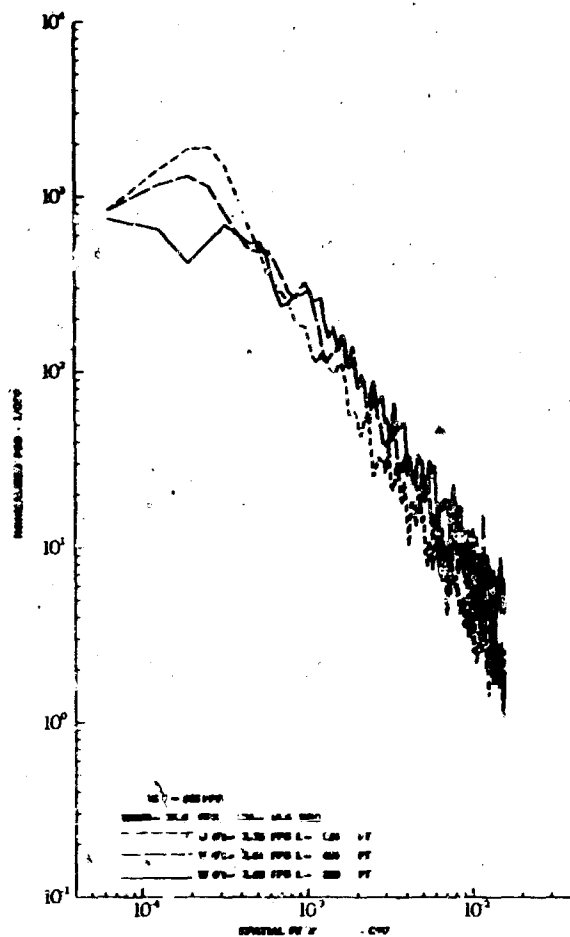
Turbulence Spectra Data For Test 297, Leg 3, Category 213210



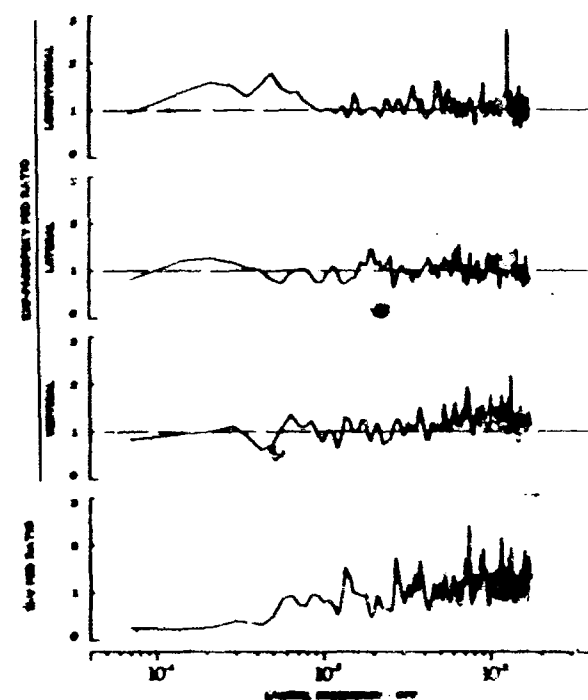
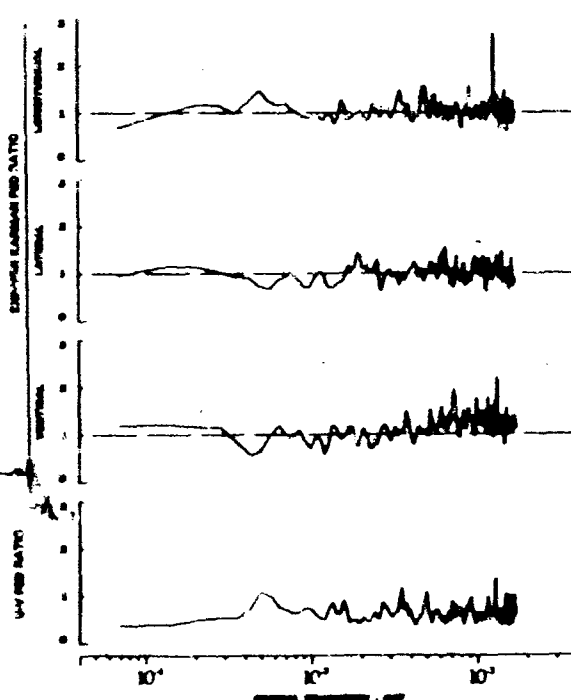
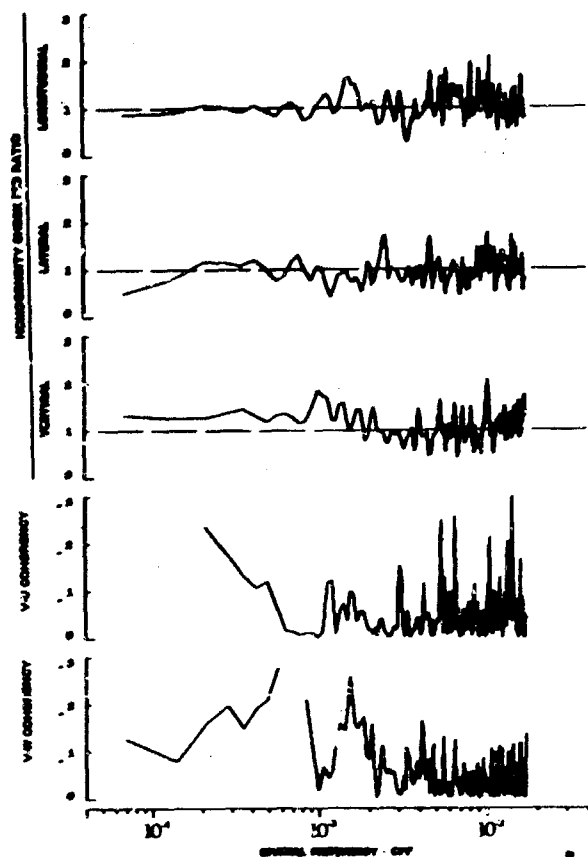
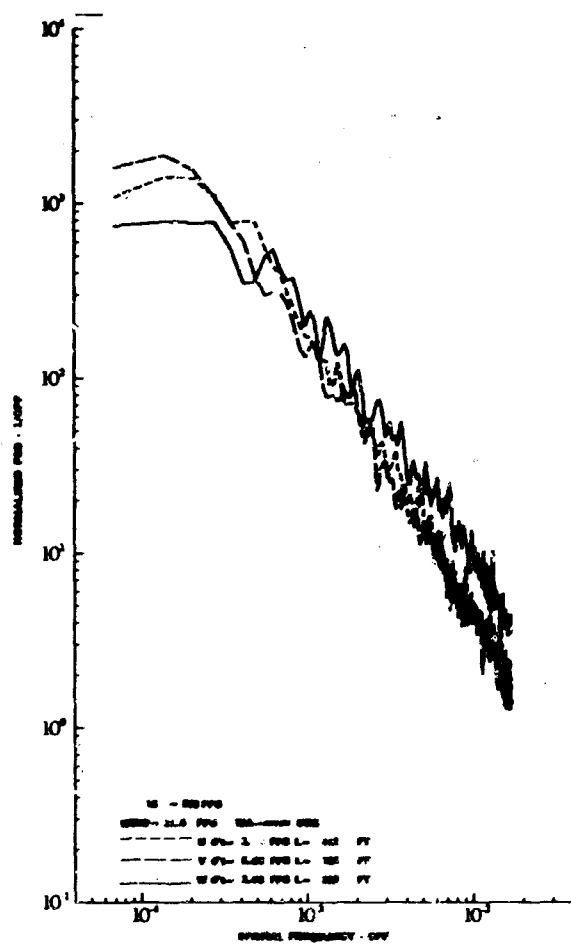
Turbulence Spectra Data For Test 297, Log 5, Category 213212



Turbulence Spectra Data For Test 297, Log 7, Category 414212

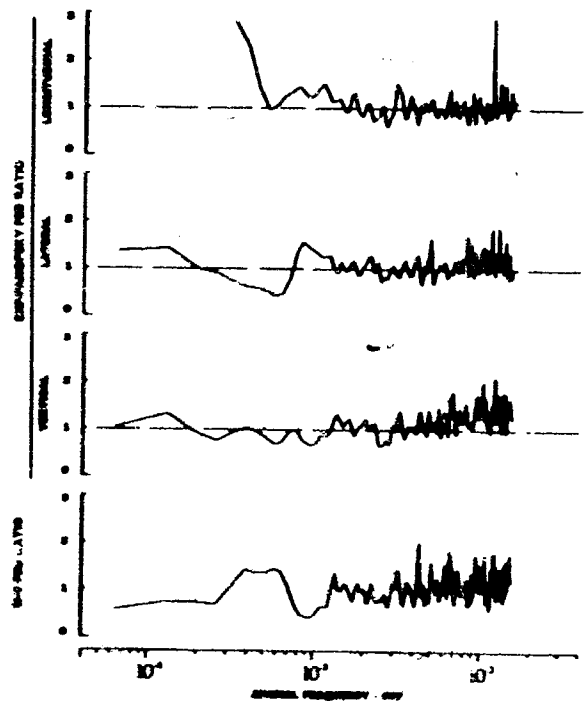
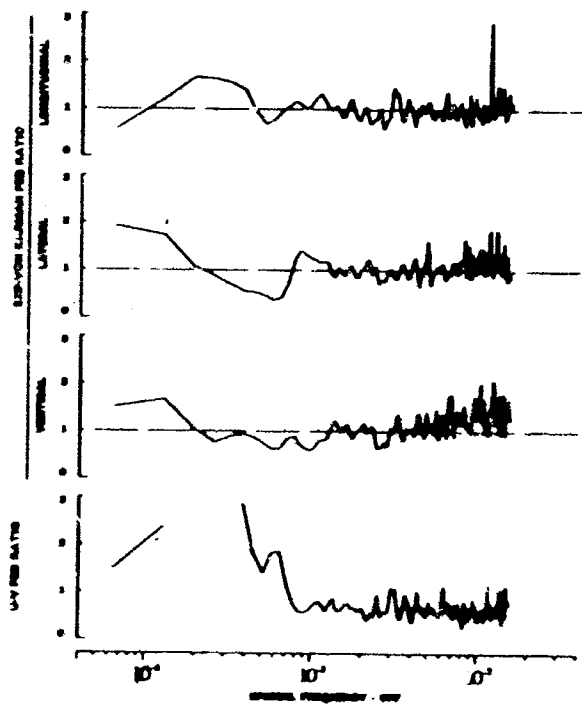
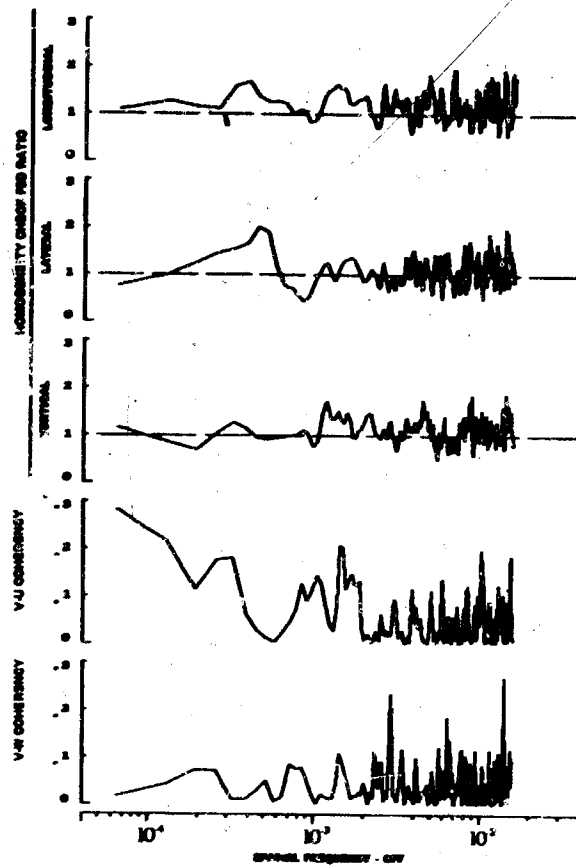
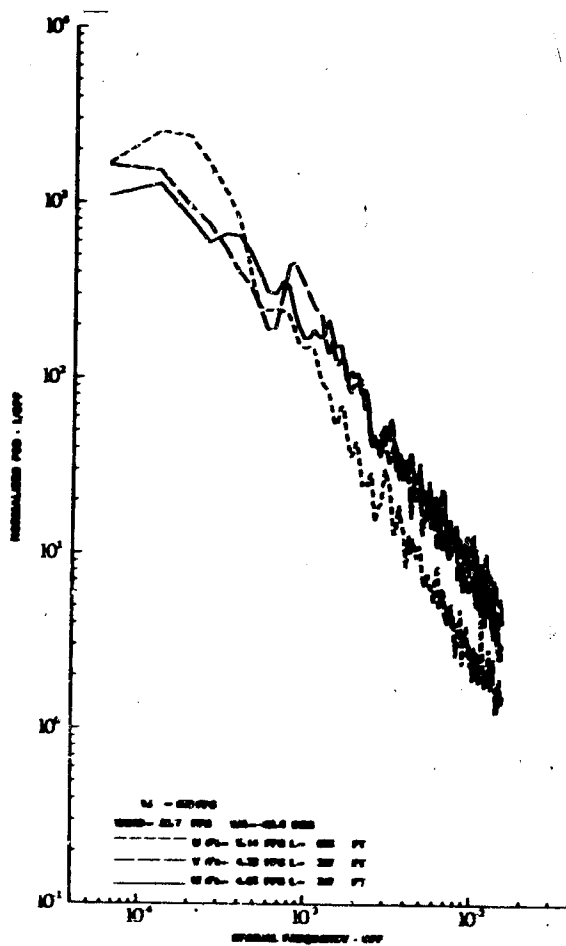


Turbulence Spectra Data For Test 299, Log 1, Category 424322

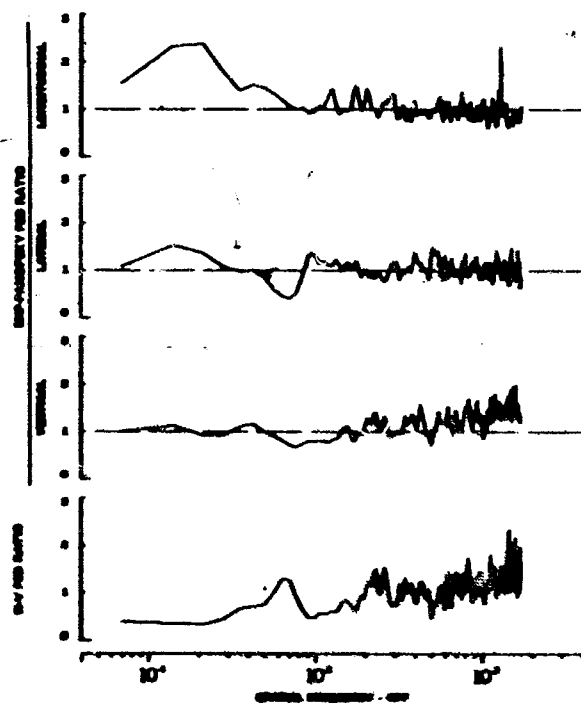
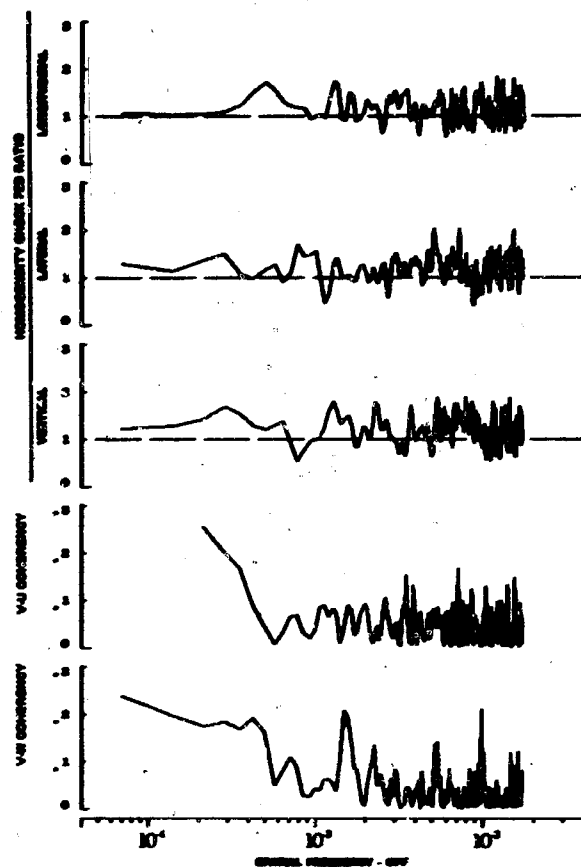


Turbulence Spectra Data For Test 249, Leg 3, Category 224322





Turbulence Spectra Data For Test 299, Log 5, Category 223322



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13. ABSTRACT This report presents procedures, analysis methods, and final results pertaining to the LO-LOCAT Phase III program. Approximately 150 hours of low altitude (100 - 1000 feet) turbulence and associated meteorological data were recorded from 16 August 1968 through 30 June 1969. A model of the turbulence environment at low-level is presented in terms of gust velocity primary peaks, level crossings, amplitude samples, rms values, and gust maxima, as well as derived equivalent gusts, turbulence scale lengths, and power spectra. Mathematical expressions for turbulence spectra, scale length, and primary peak statistics are shown. Correlations between atmospheric gust velocities and meteorological and geophysical phenomena are evaluated. It was found that gust velocity magnitude at low altitude is most affected by atmospheric stability and terrain. Gust velocity rms values above 1.5 fps may be approximated by truncated Gaussian distributions. For wavelengths less than 15,000 feet, turbulence spectra are best represented by the von Karman mathematical expressions. The turbulence, sampled for 4-1/2 minute intervals over a distance of approximately 32 miles at absolute altitudes below 1,000 feet, was found to be basically stationary, isotropic, and homogeneous. A high percentage of Phase III data were recorded over high mountains since very little high mountain data were recorded under contour flight conditions at low level during Phases I and II. Phase III data are compared with data from Phases I and II and with data from other low altitude programs.		
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14. KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
LO-LOCAT (Low-Low Altitude Critical Atmospheric Turbulence) ALL CAT Low Level Turbulence (0-1000 feet) Clear Air Turbulence (CAT) Gust Velocity Statistics Low Level Turbulence Model Meteorology (Turbulence) Turbulence Forecasting						

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